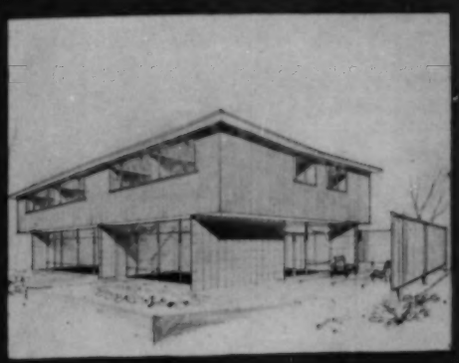
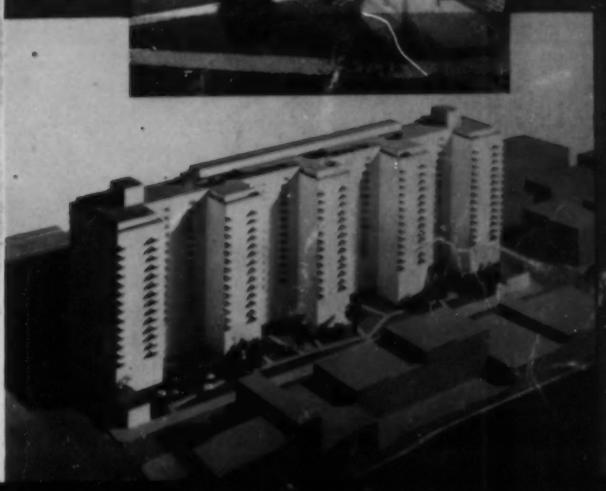
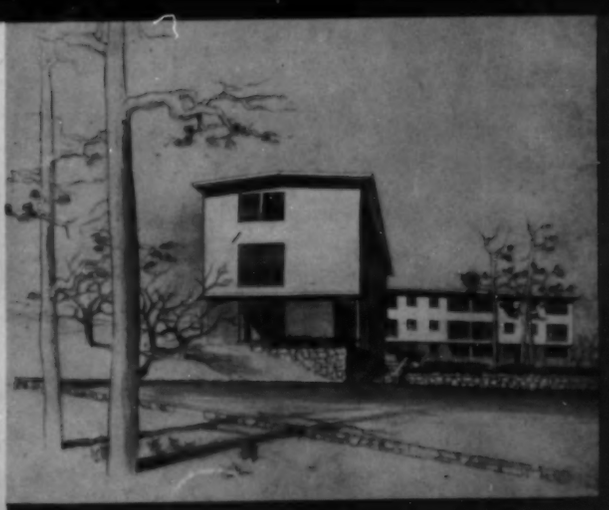
ARCHITECTURAL RECORD







FEBRUARY | 1948

APARTMENTS

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ARCHITECTURAL RECORD (Vol. 103, No. 2, February, 1948) is published monthly by F. W. Dodge Corp., 10 Ferry Street, Concord, N. H., with editorial and executive offices at 119 W. 40th St., New York 18, N. Y. $4.50 per year; Foreign, $6.50.

(Regular Edition)

Entered as second-class matter at the Post Office, Concord, N. H., under the Act of March 3, 1879.

Driveway Punched Through City Block

SPEEDS LOADING, REDUCES TRAFFIC JAM

BIG CITY traffic congestion is increasingly critical. J. C. Penney & Co., Inc., leading department-store chain, decided to do something about it. They tore out part of the ground-floor of their huge New York City warehouse, reinforced the entire structure to carry 350 to 400-lb. loads per sq. ft., built a modern concrete loading dock adjacent to main-building elevators, and concreted a 40-ft. transverse driveway from street to street. Now trucks enter from one street, back into the platform with a quarter turn, unload from both center and rear doors, drive out the other street.

Same kind of planning went into concrete work. The Bell Company, of New York, designed the job with 'INCOR' 24-Hour Cement . . . saved time, overhead and cold-weather costs . . . only one-day curing under hay and tarps. Safe, speedy, sub-freezing concrete work assured by faster thorough 'Incor'* curing. It pays to keep economies like these in mind on cold-weather work.

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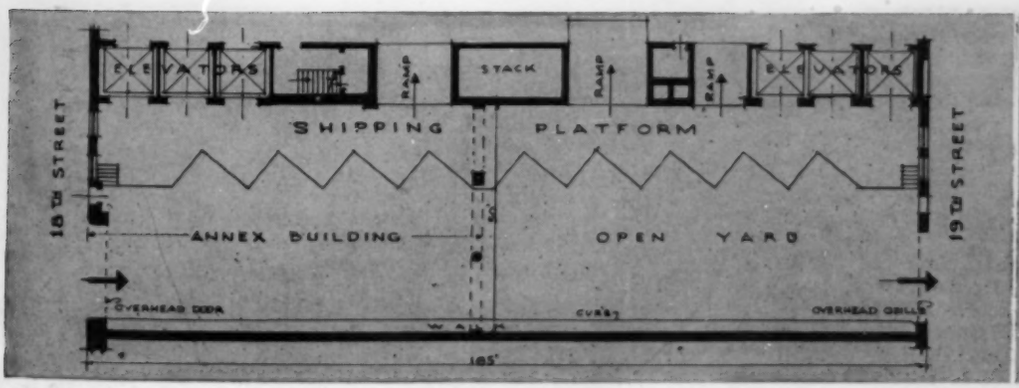

J. C. PENNEY & CO., Inc., Warehouse Loading Dock and Driveway, New York City. Industrial Engineers: THE BELL COMPANY. Construction Engineer: MATTHEW HILLER. General Contractor: BUDD CONTRACTING CORP.; all of New York City.

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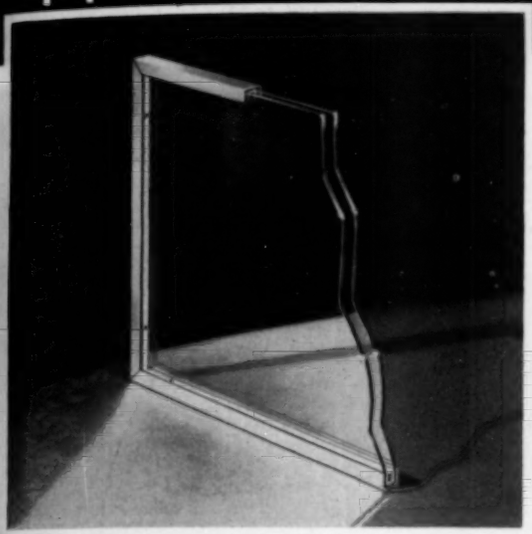
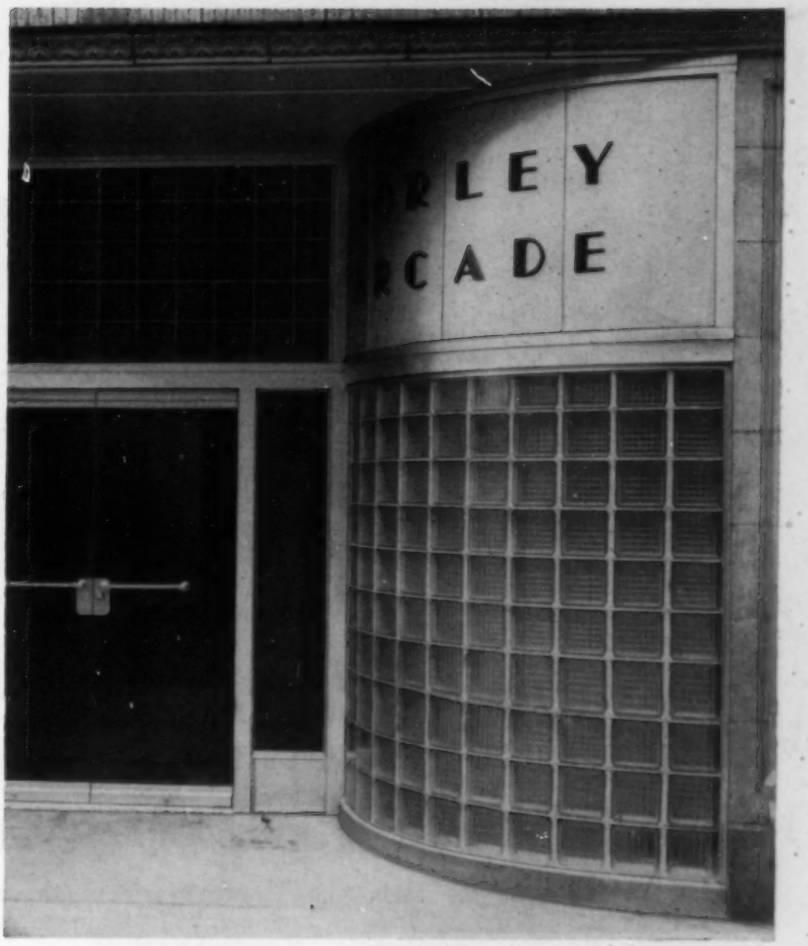


BECAUSE IT HAS BUILT-IN INSULATION, Twindow, "Pittsburgh's" latest window development is ideal for store, hotel and office windows, frozen food cabinets, refrigerated cases. When made of two panes of glass, Twindow cuts heat losses almost in half. And its insulating effectiveness becomes greater as additional panes are added. It virtually prevents steaming or frosting of windows. It minimizes downdrafts near windows. Cuts heating and air-conditioning costs.

PITTCO STORE FRONT METAL now includes a complete line of bars and sashes for use with Twindow. These members are extruded and assure rugged strength, clear, sharp profiles and a smooth finish, rich in tone and gloss. They can be used with all Pittco De Luxe standard frame mouldings, thus offering latitude of design for top quality store front installations requiring insulated windows. The most commonly used of the Pittco members—two sashes and a division bar—are themselves insulated, thus reducing heat loss through them.



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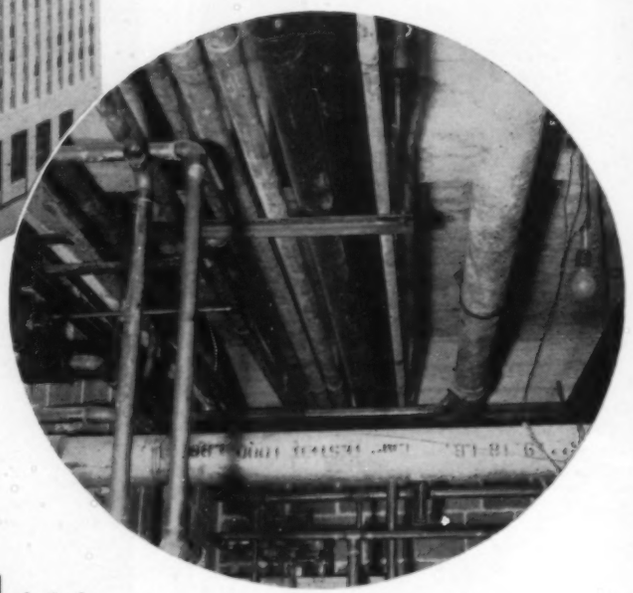

Presenting

a counter-check against corrosion . . .

BYERS WROUGHT IRON PIPE

Another evidence of the widespread revival of large building construction, this new skyscraper is the first large office building to be completed in Houston since early 1941. The designers emphasized corrosion-resistance and maintenance-control in the pipe specifications; all chilled water lines in the air conditioning system, and all hot and cold water lines over 3-inches, are Byers Wrought Iron pipe.

SERVICE-CERTIFIED

The introduction of air conditioning brought a whole new set of corrosion problems, which wrought iron has been successfully solving in all sections of the country. Some of the largest installations, in New York, Baltimore, Chicago, Pittsburgh, Memphis and numerous other centers, use wrought iron for the cooling water lines. Evidence of the superior corrosion-resistance of wrought iron in water lines can be found in old buildings all over the nation.

WHY WROUGHT IRON LASTS

Wrought iron's durability comes from its unusual character. Tiny fibers of glass-like silicate slag, threaded through the body of high purity iron, halt and "detour" corrosive attack, and so discourage pitting. The fibers also anchor the initial protective scale, which shields the underlying metal. No other material duplicates wrought iron's composition and structure.

WANT MORE INFORMATION?

Our technical bulletin, "Wrought Iron in Refrigeration and Air Conditioning Systems" gives a lot of helpful information on various proven applications for the material. We will be glad to send you a complimentary copy if you will write.

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Vol. 103 • No. 2 February 1948

ARCHITECTURAL RECORD

ON THE STATE OF THE NATION 85
An Editorial . . . by Kenneth K. Stowell

HEADQUARTERS AND "FRONT" FOR FOOD PROCESSING . . . 86
Richmond Chase Office Bldg., San Jose, Calif. Wurster, Bernardi and Emmons, Architects. Landscaping by Thomas B. Church

REDEVELOPMENT PLAN FOR GRAND HAVEN 92
Designed by Orville H. Bauer and Robert F. Van Hoef

TWO HOSPITAL PROJECTS FOR MEXICO 98
1. Hospital General de Coatzacoalcos, Veracruz. Antonio Prastana, Architect; Dr. Ignacio Mora, Medical Consultant
2. Hospital General de Tuxpan, Veracruz. Antonio Prastana, Architect; B. Yurchenco, Collaborating Architect; Dr. Ignacio Mora, Medical Consultant

GUEST HOUSE FOR A MOUNTAIN SITE 102
For Mr. and Mrs. John Lockheed, Lake Arrowhead, Calif. Lucille Bryant Raport (Raport & Hicks), Architect. Gordon De Swarte, Structural Engineer

NORTH COUNTRY HOUSE FOR MANY CHILDREN 106
Walter E. Clark House, Lake Placid, N. Y. Harwell Hamilton Harris, Architect. Russell S. Johnson, Associate

BUILDING TYPES STUDY NO. 134 . . . APARTMENTS 112

DESIGNED WITH A BUILT-IN PARK 114
Atlantic Gardens, Washington, D. C. Charles M. Goodman, Architect; L. B. Voight, Landscape Architect

APARTMENTS FOR RECREATION 116
Villa Hermosa, Palm Springs, Calif. Clark & Frey, Architects

NEW APARTMENTS OVER A DRAFTING ROOM 120
The Office of Pietro Belluschi, Architect, Portland, Ore.

GARDEN APARTMENTS FOR RENTAL HOUSING 122
Langley Park Project, Montgomery County, Md. Charles M. Goodman, Architect.

COOPERATIVE APARTMENTS NEAR THE SIERRAS 124
Richard J. Neutra, Architect

STUDENT APARTMENTS IN TEXAS 126
Page, Southerland & Page, Architects

VETERANS' COOPERATIVE APARTMENTS IN NEW YORK 128
Charles E. Greenberg, Architect

A NINETEEN STORY CITY APARTMENT 130
Mayer & Whittlesey and Skidmore, Owings & Merrill, Associated Architects

IMPROVED HOUSING FOR WASHINGTON, D. C. 132
Development for J. B. Tiffey and Son. Berla & Abel, Architects

ARCHITECTURAL ENGINEERING . . . Technical News and Research . . 135

THE WALL OF THIN SELF-FRAMED METAL PANELS 135
By Robert L. Davison, Research Associates; Howard Fisher, Architect

PRODUCTS . . . For Better Building 140

FIBERGLAS BUILDING 140

TIME-SAVER STANDARDS 145
Critical Dimensions Governing School Design

MANUFACTURERS' LITERATURE 150

THE RECORD REPORTS . . . News from the Field 7

CONSTRUCTION COST INDEXES 26

REQUIRED READING 28

EMPLOYMENT OPPORTUNITIES 206

INDEX TO ADVERTISEMENTS 218

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Plumbing Contractors Vote For Adjustable Flush Valves 20-1

Based upon 508 replies from an unbiased survey made among 1,154 of the country's leading plumbing contractors, including those registered at the 1947 N.A.M.P. Convention.

It's the plumbing contractor who actually puts flush valves to work, and who knows first hand the varying operating conditions under which they must serve. Can there be any more convincing endorsement of the adjustable idea than this practically unanimous approval from plumbing contractors?

Architects, too, in a previous survey, reported a similar overwhelming preference for adjustable flush valves. Everywhere the verdict is clear and unmistakable.

For the next job that needs flush valves, keep in mind the well-recognized advantages of the adjustable feature—the feature that makes possible more efficient operation of all fixtures, maximum water savings, and maintained efficiency despite years of service and changing operating conditions. Keep in mind, too, that it was Watrous who pioneered the idea, and that *all* Watrous Flush Valves are adjustable.

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1240 W. Harrison Street, Chicago 7, Illinois

For complete information on Watrous Flush Valves see Sweet's Catalog, or write for Catalog No. 448-A. Also ask for Bulletin 477 giving a summary of "Architects' Views on Flush Valve Applications."

A few additional words in your specifications, such as: "All flush valves shall have an external adjustment for length of flush," will bring all the above advantages.

Watrous Adjustable Flush Valves

BOTH DIAPHRAGM AND PISTON TYPES

THE RECORD REPORTS

FHA Continues to Stress Rental Units • Public Works Program Gains Momentum • Construction Picture Clouded by Marshall Plan Requirements

Those who have been tackling consumer and bank credit problems in the anti-inflation fight wonder increasingly how to fit home financing into the general credit mosaic. The question raised its head officially during the special session of Congress last fall.

Both Administration and Congressional quarters have been plumbing possibilities. Marriner S. Eccles, Federal Reserve Board chief, minces no words: "One of the most inflationary factors — perhaps the most inflationary single factor — in the present situation is excessively easy mortgage credit for housing. . . . Easy credit has greatly increased the effective demand for both old and new housing far beyond the supply and this has greatly inflated prices." He considers it inconsistent to restrict terms on autos, etc., and at the same time stimulate home indebtedness.

Federal Housing Administration records, incidentally, show that mortgage insurance applications through its field offices reached an all-time high in November, covering more than 76,000 dwelling units.

When Congress in December provided an additional $750,000,000 for NHA Title VI loans, it simply deferred — because the call for added funds was urgent — its consideration of inflationary aspects. If the authority is to continue, action must be taken before the end of March, when the law expires. Leaders feel that the decision must be related to the general credit structure.

Rental Units Favored

As FHA resumed its insurance authorizations following the December enactment, it sought to apply a major portion of its commitments to rental units, and to issue none where prices or rentals were too high. By selective processing Commissioner Franklin D. Richards hoped to "combat inflationary prices."

As to rental units, federal statisticians point to the steady increase in multi-family dwelling units, which, they feel, means better tailoring of construction to housing needs of the population. Part of the increase they attribute to the June removal of rent controls on new building and to wider use of the more liberal FHA financing.

In this connection FHA has issued an illustrated study of rental housing plans, showing poor, fair and good living room, dining room, bedroom and closet plans as well as project plans. It pictures projects in operation and cites qualities preferred in such projects, including location in a residential area, a unit appealing to long-term rather than temporary occupants, income adequate to assure financial success, and tenants not dependent alone on a single industry in the community.

Housing Study Continued

The Congressional Joint Committee on Housing, as it opened additional hearings in January, included on its agenda suggestions on the best means of financing home purchases and at the same time combating further inflationary tendencies. It sought to learn the extent to which price increases have hampered home production, the role of gray market operations in building materials and the role of export policies, the effects of prewar distribution patterns of manufacturers in upping home prices, and how much voluntary cooperation by labor can increase on-site productivity.

On the latter point, Chairman Gamble announced the appointment of subcommittees to consider labor angles while Richard J. Gray, of A.F.L.'s Building Trades Department, named a corresponding bi-partisan labor committee representing all parts of the country, which was to cooperate in recommendations and in the make-up of proposed new housing legislation. Similar cooperating committees were sought among building material manufacturers, home builders, realtors and financial interests.

Coincidentally, President Truman was asking the Congress to approve the long-range housing program he proposed last year. In his message on the state of the union he reiterated that this should include "financial aids designed to yield more housing at lower prices. It should provide public housing for low-income families, and vigorous development of new techniques to lower the cost of building." He asked that the rent control law be not only extended but strengthened.

Other Negotiations Proceed

Meanwhile, Federal Public Housing Authority activities in California were coming under the scrutiny of the Publicity and Propaganda Subcommittee of the House Executive Expenditures Committee. Preliminary reports, said Chairman Harness, indicated mismanagement. Too, the House Public Works Committee began an investigation of conspiratorial practices and black markets in the construction industry, with Rep. Macy as subcommittee chairman.

Also in question were activities of the Greater Kansas City Chapter of the National Electrical Contractors Association, against which a federal grand jury returned anti-trust indictments on the Justice Department charge of conspiring to restrain trade in the installation of

(*Continued on page 10*)

—Drawn for the RECORD by Alan Dunn

Business and professional mora

"We consider the Servel *All-Year* Gas Air Conditioner to worth-while investment, and do not hesitate to recommen says Sam Rubin, jeweler, of 323 De Siard St., Monro "Customers have been attracted to the conditioned space we have been able to keep our merchandise in better condi

"Ideal for efficient work in medical offices," says Dr. Fred. L. Scott, of Huntington Park, Calif., about the temperature and humidity conditions maintained the year round in his offices by Servel.

"Very satisfactory in all respects," agrees W. D. O Vice President and Cashier of the Bank of Beaum California, which is kept cool in summer, comfort warm when needed, by the Servel unit.

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THEY SAY SERVEL *All-Year* GAS AIR CONDITIONER PROMOTES HEALTH, EFFICIENCY, BUILDS PROFITS

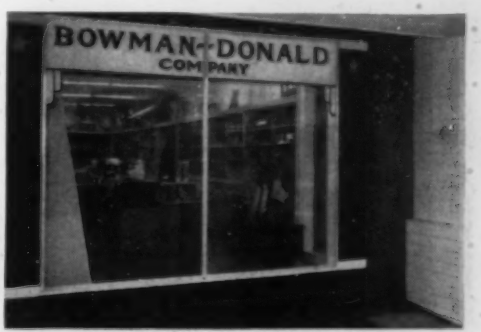
TYPICAL of hundreds of letters in our files from business and professional men all over the country are the testimonials on these two pages. Practically everyone who has a Servel *All-Year* Gas Air Conditioner is more than pleased with the results. In fact, as you'll see on the right, one enthusiastic user has installed *three* units—one in his home, one in his automobile agency, and one in a store he owns!

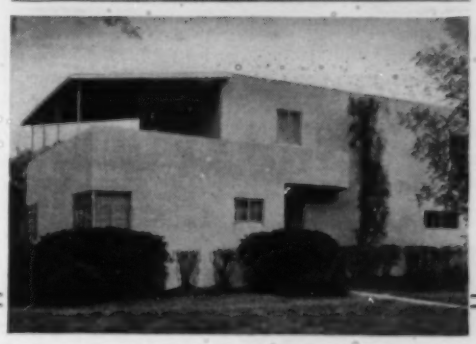
Everywhere, users agree that this wonderfully efficient year-round conditioner is worth every penny it costs. Some go so far as to declare it will actually pay for itself in a very few years! So you can recommend Servel *All-Year* Gas Air Conditioning to your clients with every assurance that it will perform up to expectations. And that your clients will be glad you brought Servel's advantages to their attention.

Complete in one unit, the Servel conditioner refrigerates and dehumidifies the air in summer. In winter, the same unit heats and humidifies the air. In between seasons, it offers independent air circulation at prevailing temperatures. Year-round, it filters dust, dirt, and irritating pollen from the air. A "flick of the finger" controls all operation.

Check your list of clients today. Determine which are logical prospects for Servel *All-Year* Gas Air Conditioning. Then ask your local gas company for more detailed information about these types of application. Or, write direct to Servel, Inc., for application data and names and addresses of satisfied users with comparable installations. Address Servel, Inc., 8802 Morton Ave., Evansville 20, Indiana.

"If I could find another place to install Servel *All-Year* Gas Air Conditioning, I would do it," says Frank M. Bowman, Alice, Texas, businessman. He already has three Servel units, one in his automobile agency (above), and one each in his store and home (below).





Servel

All-Year GAS AIR CONDITIONER

The jury for the 1947 Architectural Award program of House and Garden convenes with Mrs. Katherine Morrow Ford, the magazine's architecture editor. Left to right: Louis Skidmore, Mrs. Ford, George Howe, Vernon De Mars, Hugh Stubbins, Cameron Clark

HOUSE AND GARDEN WINNERS ANNOUNCED

West Coast architects took more than their share of the awards in the $2000 1947 Architectural Award program sponsored by *House & Garden* magazine. Fred Langhorst of San Francisco took first prize in Class I (houses 1800 sq. ft. and under), Richard J. Neutra of Los Angeles first prize in Class B (houses over 1800 sq. ft.), Gordon Drake of Los Angeles second prize in Class I, and Albert Henry Hill of San Francisco second prize in Class B. In addition, honorable mentions went to Neutra and Hill, and to Bliss Moore, Jr., of Seattle, J. R. Davidson of Los Angeles, Clark & Frey of Palm Springs, and Woodbridge Dickenson, Jr., of Pasadena. Other honorable mentions were given to Johnson & Whitcomb of Cambridge, Mass.; Kenneth Kassler, Princeton, N. J.; Marcel Breuer, New York City; and Alden B. Dow, Midland, Mich.

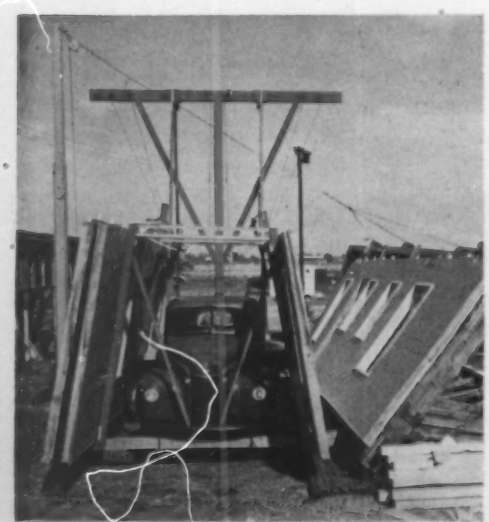
To ARCHITECTURAL RECORD editors the decision of the judges was most appealing: both of the first-prize winners as well as the second-place winner in Class B are shortly to appear in the RECORD; Marcel Breuer's honorable-mention entry and that of Alden Dow already have been published (Sept. and Nov., 1947).

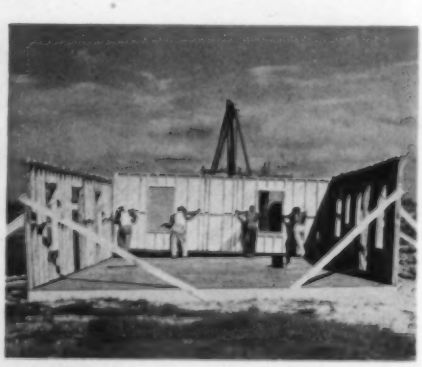
NOVEL PRODUCTION METHOD SPEEDS CONSTRUCTION

A novel form of house assembly is being used by the Thomas P. Coogan Co. to speed erection of some 600 two- and three-bedroom homes included in the Essex Village development at Hialeah, Fla., a suburb of Miami.

Virtually all lumber for the homes is pre-cut to exact measure in the assembly yard on the project. Walls are assembled in the same yard, one by one, with the use of a jig. As each is finished it is loaded on a specially-rigged truck (see photo below) which takes the walls four at a time to the site. There the walls are unloaded directly to their position on a prepared foundation. The whole unloading operation, including the work of making the walls fast and tying them together, takes a half hour.

(*Continued on page 12*)





Fast assembly of Florida homes: walls are loaded four at a time on specially rigged truck (left), taken to site and unloaded directly from truck to foundation (below)

THE RECORD REPORTS

(*Continued from page 7*)

electrical systems in housing. The indictment alleged that, in order to eliminate competition, the defendants "agreed unlawfully upon escalator clauses in bids. They also agreed upon a uniform, minimum mark-up to be charged for labor when selling electrical contracting service and to include in their charges for work on prefabricated houses a sum which would represent the profit they would have made if the electrical materials already in these houses had been sold by them."

Public Works Gain

A boost in public construction over last year is among the predictions emanating from federal offices. While the boost is expected to be moderate, state and local public projects will push ahead at a faster rate than federal because of urgent needs for health, safety and welfare construction in local communities. Percentage boosts are set at from 15 to 20 per cent for federal projects and 25 to 30 per cent for state and local outlays.

All types of public construction presumably will be affected, including sewer and water facilities, schools, hospitals, airports and conservation and development projects. Availability of materials and labor is counted on to make for greater building efficiency, cutting down building time.

The Federal Works Agency points to the huge accumulation of public construction requirements due not only to the depression years and war curtailment but also to the priority given housing and other private construction since the war. FWA estimates the total needs at $75 billion or more and stresses the importance of a continued advance planning program so that engineering and legal work, land acquisition and structural design can all be completed before and not after the decision to build. It points out that authority for federal aid in project planning lapsed last June 30, removing the impetus for further building up a reserve of completed plans.

What Price the Marshall Plan?

Among uncertainties in 1948 construction is, of course, the Marshall Plan and the resultant call on steel. Under the special session action, allocation came into play, with steel among the commodities falling under the jurisdiction of the Commerce Department. Allocations on a voluntary, industry-wide basis were made possible by the anti-inflation law, and President Truman assigned the various items to four agencies for implementation: farm products

(*Continued on page 14*)

DOUBLE DUTY

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(BILDRITE SHEATHING)

BUILDS . . . INSULATES

You pay for *one* but you get TWO . . . uses. Sheathing PLUS *insulation*. Your client gets *more* for his money and is better satisfied. Better construction, stronger bracing, plus *insulation* as a bonus. Specify double-duty INSULITE.

Refer to Sweet's File, Architectural Section 10a/9

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TODAY, stationary and mobile equipment designers and manufacturers are specifying AW Super-Diamond Floor Plate for all surfaces on their products, on which men walk or climb. The exclusive AW Super-Diamond Pattern provides *extra* safety for workers which ~~ordinary~~ floor plate does not offer. It grips without a slip preventing costly slipping accidents. It's extra economical—the first cost is low and there is no maintenance cost. Follow the example of leading designers and specify AW Super-Diamond Floor Plate for your products. Write for complete information, and a copy of our catalog.

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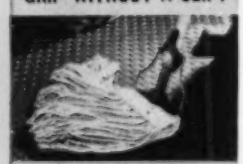
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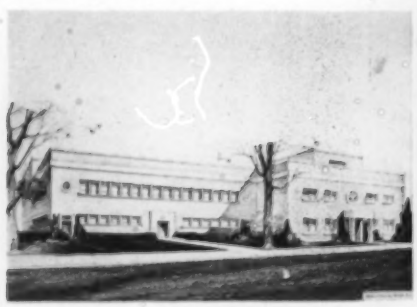
THE RECORD REPORTS

(Continued from page 10)

A completed Essex Village home, one of 600 being built by Coogan Davis, Inc.

More than 200 of the homes have been completed since the project was started a year ago, and the current production rate is two a day; most of them are going to veterans. Located on lots 60 by 108 ft., the houses sell for $6700 for the two-bedroom types and $7500 for the three-bedroom. Included in the price are electric stove, refrigerator and hot water heater.

When finally completed, the Essex Village project will include, in addition to the one-family houses, 70 duplexes and 112 apartment units as well as a shopping center. Estimated total cost is $7,000,000. Developers are Coogan Davis, Inc., of Miami.



New two-story building for Merck & Co., Rahway, N. J.; George P. Butler architect

ANTIBIOTICS PRODUCTION FACILITIES INCREASED

Plans have been announced by Merck & Co., Inc., manufacturing chemists, for a new two-story building for increasing the finishing and packaging facilities for penicillin and streptomycin. The new $400,000 unit will be an annex to the present Sterile Techniques Building at Rahway, N. J. It will contain special equipment for weighing and packaging, and will provide increased finishing and storing facilities. George P. Butler of New York is the architect for the new building, and Walter Kidde Constructors, Inc., of New York, the contractor.

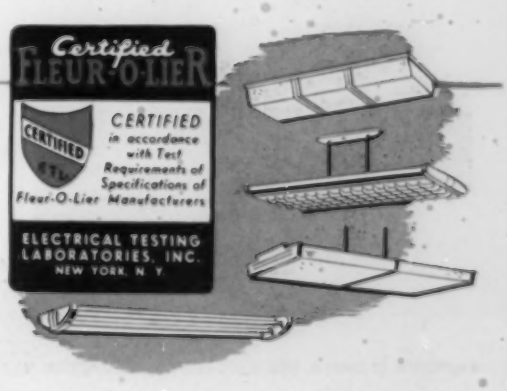
What does FLEUR·O·LIER mean to you?

Fleur-O-Lier fixtures are made to exacting specifications that cover performance, construction and safety. Then they are tested and certified by Electrical Testing Laboratories Inc., as meeting these specifications. A Fleur-O-Lier label on each fixture identifies them.

What's the value of this?

Fleur-O-Lier fixtures are insurance on your reputation. A Fleur-O-Lier installation assures customer satisfaction—freedom from complaints. With Fleur-O-Lier equipment you *know* the customer will get fine lighting performance—trouble-free operation.

Fleur-O-Lier is both a Product and a Program. Those rigid specifications, the careful checking, enable you to give the product unqualified endorsement. The promotional program develops the commercial fluorescent lighting market—and raises the standards of lighting to higher levels. You benefit—and the customer benefits.



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Manufacturers

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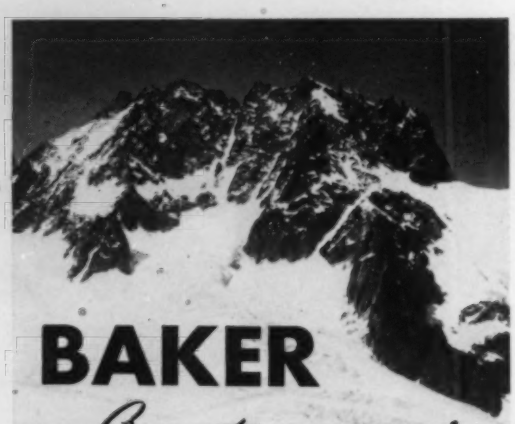
Fleur-O-Lier is not the name of an individual manufacturer, but of a group of fixtures made by leading manufacturers. Participation in the Fleur-O-Lier program is open to any manufacturer who complies with Fleur-O-Lier requirements.



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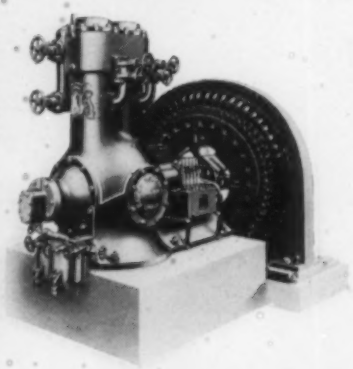
at South Windham, Me. and Omaha, Neb., are turning out more Baker quality equipment than ever before in the company's history.



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Baker offers a complete line of precision-built Freon and Ammonia equipment. Units in a wide range of capacities for both low and high temperature work.

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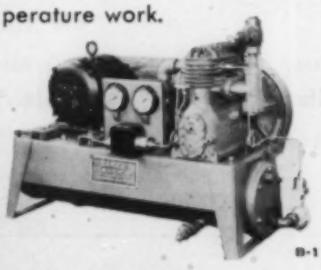
Company branches and distributors, staffed by experts are located in principal cities from coast to coast. For the name and address of the office nearest you, write: Baker Ice Machine Co., Inc., South Windham, Maine.



B-1

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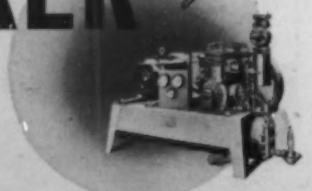


AIR CONDITIONING AND REFRIGERATION

FACTORIES AT OMAHA, NEBRASKA AND SOUTH WINDHAM, MAINE • HEADQUARTERS, SOUTH WINDHAM, MAINE

THE RECORD REPORTS

(*Continued from page 10*)

to Agriculture, fuels to Interior, transportation to ODT, and all others to Commerce. Like the wartime WPB system, the plan includes industry advisory committees, and Commerce promptly called a conference with the steel industry. The four agencies have an overall working committee and a chairman to iron out details of the voluntary agreements.

Another imponderable in 1948 predictions is the growing output of consumer goods which might take away from funds for housing — more new cars, new washers, new furniture. Nevertheless, the Commerce Department's Construction Division feels that the continued high level of construction in November and December augurs well for a good year in 1948. The Labor Department's construction employment studies lead it to predict increasing employment in 1948 with 950,000 new housing starts. It counts on the rising rate of apartment building, which began last May, to keep up but with slight increase in housing for moderate and low-income families.

Commerce's summation for 1947 puts new construction at $12.8 billion, a 30 per cent increase over the first postwar year of 1946, and new private construction at $9.8 billion, a 28 per cent rise. Private residential building rose 55 per cent while nonresidential dropped 5 per cent. New public construction gained 40 per cent and highways 72 per cent.

Housing and Taxes

The tussle over taxes in the current Congressional session may and may not reach directly into housing, but Chairman Gamble of the Congressional Joint Committee on Housing is sympathetic to changes in tax laws. He favors accelerated depreciation on new homes, letting the taxpayer benefit from larger deductions. He would abate, up to roughly 3 per cent, the taxes on corporations in the building field. Rep. Gamble also feels that there should be insurance of some minimum yield on new construction and that efforts should be made to get cities to contribute land and help in providing utilities.

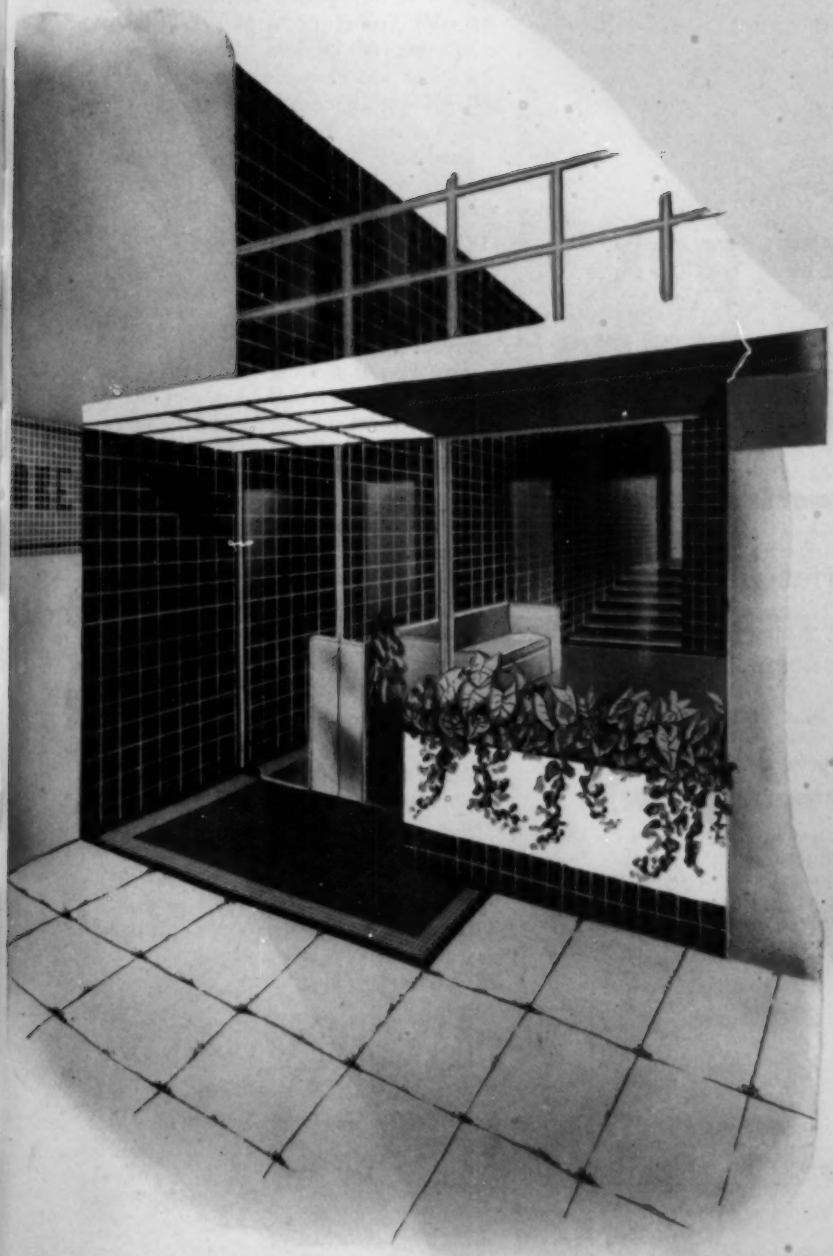
Other Developments

1. Priority-built houses under the Veterans Emergency Housing Act no longer are restricted in resales to the maximum sales prices paid for them, the Housing Expediter's Office has ordered. The resale price ceiling, it was found, left some veterans in a squeeze. The new action, too, lets more enforcement time go to violations of original ceiling prices.

(*Continued on page 16*)

Suntile offers you both

• BETTER TILE
• BETTER INSTALLATION



Suntile offers you *two-way* quality. Quality in the tile itself—and quality in installation.

The *first* is gained through constant research and rigid scientific manufacturing control which gives Suntile beauty—utility—low life-time cost. It's *color-balanced* so that harmonious blends may easily be achieved.

The *second* is gained through careful selection and training of Suntile dealers. These men *know how* to install Suntile and bring out all of its inherent qualities.

For better tile—better installation, let us send you the name of an Authorized Suntile Dealer. He can show you real clay Suntile in 16 wall colors. Also impervious unglazed ceramic mosaic Suntile in 15 colors—and Suntile Camargos in 10 colors—in modular sizes.

See Sweet's Catalog for complete details. The Cambridge Tile Manufacturing Company, Cincinnati 15, Ohio.

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Suntile

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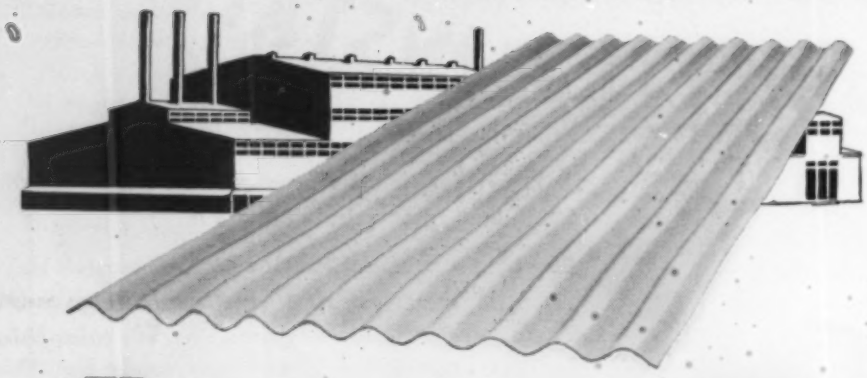
. . . . . Right for life

Planning a

Chemical Plant Oil Refinery Paper Mill?

... or an addition?



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Why we can assure you early delivery

We are concentrating on production of this single industrial product. Stocks are now ample to make some immediate shipments. Free Engineering Service, available on request, shows how Asbestone can be adapted to your needs.

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THE RECORD REPORTS

(*Continued from page 14*)

2. The Budget Bureau has been looking into possible refinement of building statistics, including building permits and contracts awarded. Meanwhile a new series on construction activity in suburbs and countryside, where permits are not issued, is being worked up.

3. Insured savings and loans associations in 1947 increased their combined assets from $7.3 billion to $8.5 billion, the Federal Savings and Loan Insurance advises. Home owners with mortgages held by these associations, it adds, made repayments on their loans totaling over $1.5 billion.

❖ ❖ ❖

ON THE CALENDAR

Jan. 12–March 20: "2500° F. — The Art and Technique of Modern Glass," exhibition of modern glass from 51 American and European manufacturers, The Cooper Union Museum for the Arts of Decoration, New York City.

Feb. 7–26: "French Prints from Corot to Picasso," exhibition of drawing, etching and lithography, School of Architecture and Allied Arts, University of Oregon, Eugene, Ore.

Feb. 11–12: Building Forum and Clinic, Pennsylvania State College, State College, Pa.

Feb. 22–26: Annual Convention and Exposition, National Association of Home Builders, Stevens and Congress Hotels, Chicago.

March 1–4: Planned Lighting Ex osition and conferences, sponsored by the Electric League of Western Pennsylvania, William Penn Hotel, Pittsburgh, Pa.

March 2, 4, 8, 10, 11: Series of public lectures, "Cities in Transition — The Causes and Consequences of Metropolitan Decentralization," Frich Chemical Laboratory, Princeton University, Princeton, N. J.

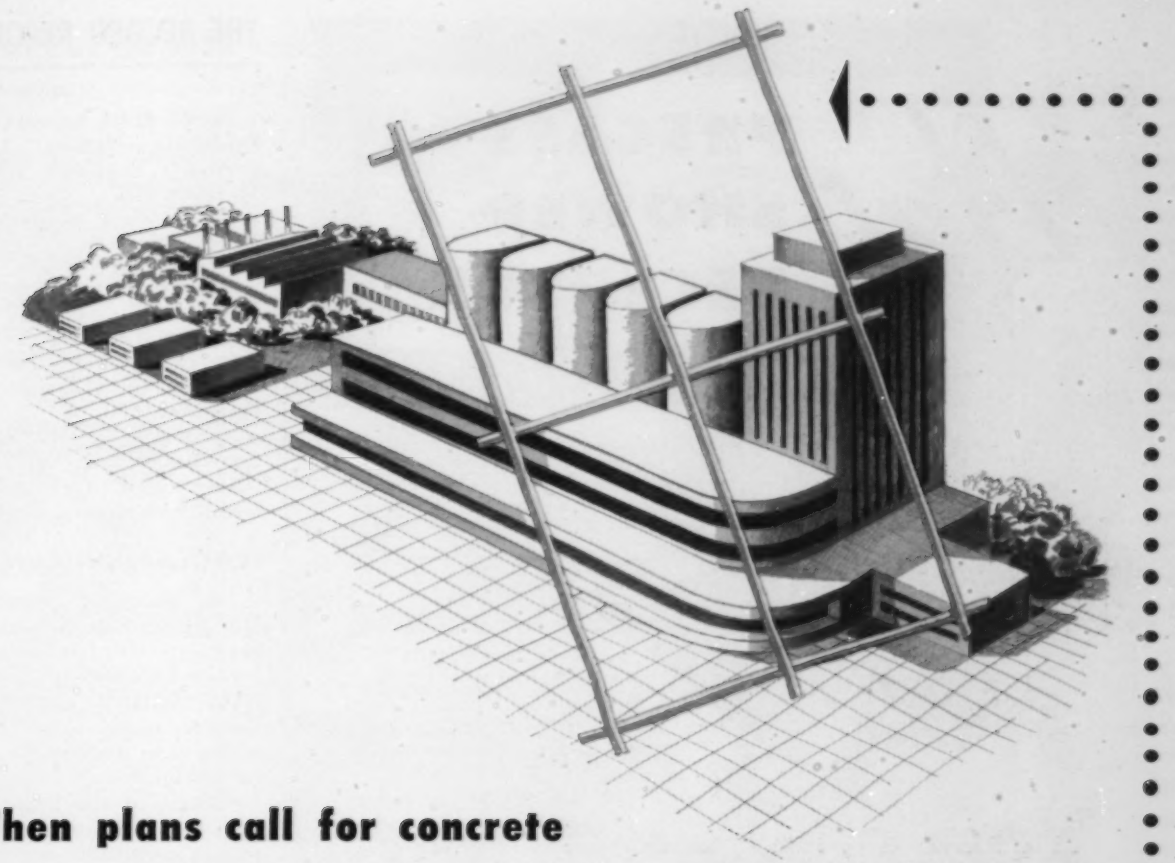
March 6: Symposium on Educational Buildings, sponsored by the Pennsylvania Society of Architects, Houston Hall, University of Pennsylvania, Philadelphia, Pa.

March 6–20: "Eckbo, Royston and Williams," exhibition of landscape architecture, School of Architecture and Allied Arts, University of Oregon, Eugene, Ore.

March 15–19: 6th Annual A.S.T.E. Industrial Exposition, and 16th Annual Meeting, American Society of Tool Engineers, Cleveland, Ohio.

March 22–24: 1948 Chicago Production Show and Technical Conference, Chicago Technical Societies Council, Stevens Hotel, Chicago, Ill.

(*Continued on page 18*)



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● Architects and construction engineers have helped make American Welded Wire Fabric the world's most widely used reinforcement for concrete.

Closely and accurately spaced, the many high tensile strength steel members of American Welded Wire Fabric fortify all concrete construction against stresses, strains, and impact in all directions.

American Welded Wire Fabric comes to the job in rolls or flat sheets. Both are easily handled, lie flat and stay in place.

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UNITED STATES STEEL

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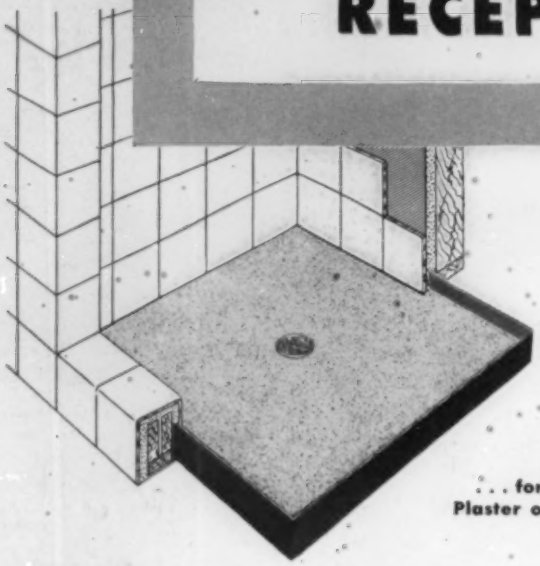
FACTORIES SMALL HOMES SCHOOLS SKYSCRAPERS HOSPITALS

Fiat PRECAST SHOWER RECEPTOR



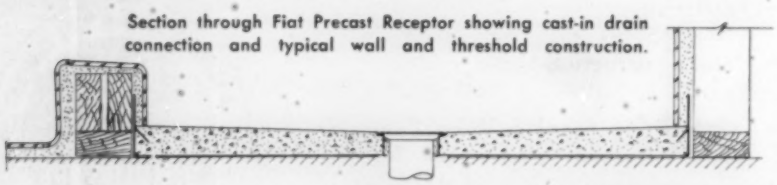
STANDARD SIZES
32" x 32"
36" x 36"
40" x 40"

. . . for built up showers with Tile, Plaster or Structural Glass Walls

A Fiat Precast Receptor in a built up shower is assurance of a water tight leakproof job at a considerable saving in cost over a hand fabricated floor using the old lead pan method. Walls are easier to handle with a solid one-piece foundation provided by a Fiat Precast Receptor.

A brass drain for 2" waste and the galvanized steel side wall flange is cast integral with the terrazzo forming a complete one-piece floor that is not affected by shrinkage or movement of supporting wood members.

Section through Fiat Precast Receptor showing cast-in drain connection and typical wall and threshold construction.



Fiat glass doors make showers more attractive in appearance and have a definite practical value to the user. Three types available: Dolphin, the finest in door construction, solid brass chromium plated frame. Zephyr, a satin finished aluminum frame door in the medium price class. Neptune, a low cost aluminum frame door. All Fiat doors are made for opening 24 inches wide.

Dolphin or Zephyr Door on built-in Fiat Shower.

Fiat

In Canada—Fiat showers are made by the Porcelain and Metal Products, Ltd., Orillia, Ontario

Metal Manufacturing Company

Chicago 13, Illinois

Long Island City 1, N. Y. Los Angeles 33, Calif.

THE RECORD REPORTS

(*Continued from page 16*)

April 5–8: 4th Annual Conference and Exhibition, National Association of Corrosion Engineers, Jefferson Hotel, St. Louis, Mo.

April 7–9: Spring Meeting, American Society of Civil Engineers, William Penn Hotel, Pittsburgh, Pa.

April 7–14: San Francisco National Home Show, sponsored by the San Francisco Real Estate Board and the Associated Home Builders of San Francisco, Inc., Civic Auditorium, San Francisco, Calif.

April 13–16: 18th Annual Safety Convention and Exposition of the Greater New York Safety Council, Hotel Pennsylvania, New York City.

SCHOLARSHIP ANNOUNCED

The Managing Committee of the John Stewardson Memorial Scholarship in Architecture has announced a competition for a scholarship to the value of $1000, the holder of which is to pursue the study of architecture in this country or abroad as determined by the Committee and under its direction.

Citizens of the United States who shall have studied or practiced architecture in the state of Pennsylvania for at least one year immediately preceding the scholarship award are eligible to compete. Candidates must be not less than 22 or over 32 years of age on February 28, 1948, and must have completed four years of office experience, or three years of office experience and one year of college, or two years of office experience and two years of college, or one year of office experience and three years of college, or four years of college and no office experience.

Applicants are required to forward to the Committee not later than Feb. 28, 1948, the information called for in the Registration Blank which will be provided upon request by the Secretary, Henry D. Mirick, Room 809, 12 S. 12th St., Philadelphia 7, Pa.

AT THE COLLEGES

Research Studies Started

Eight research studies concerned with technical advancement in the use and production of brick and tile are under way in seven universities and technical institutions and at the National Bureau of Standards, according to an announcement by Roy A. Shipley, president of the Structural Clay Products Institute. The studies are expected to be completed in 1948, and are being conducted with the aid of a grant from the Office of Technical Services of the U. S. Department of Commerce. The projects are:

University of Texas — tensile strength

(*Continued on page 20*)

RIGHT AT HOME ON FIFTH AVENUE . . .

G-E Textolite plastics surfacing blends with the rich modern decor of the St. James Restaurant, Fifth Avenue, New York City.

● Smart appearance invites more customers . . . that's why General Electric Textolite table tops are so popular in restaurants and hotels.

Handsome General Electric Textolite surfacing helps dress up tables and counters in . . . cocktail bars . . . cafeterias . . . soda fountains . . . wherever hard use calls for exceptional durability. The laminated construction of this rugged plastics sheet stands up under shock. It resists scratching better than low carbon steel. And its stainproof luster is unmarred by alcohol, food acids, disinfectants, or scalding liquids. Even a burning cigarette won't blister its smooth finish.

Find out more about General Electric Textolite surfacing. You can choose from many standard colors and designs to match your decorative scheme. Get your free copy of the *illustrated booklet* which shows these standard patterns *in full color*. Just drop us a line, or use the coupon. Your fixture manufacturer will gladly equip your new counters and tables with Textolite surfaces in the pattern you select. Plastics Division, Chemical Department, General Electric Company, 1 Plastics Avenue, Pittsfield, Mass.

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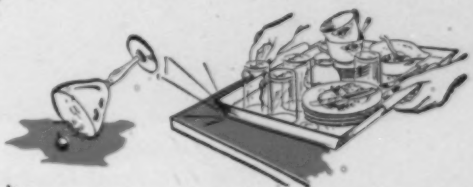

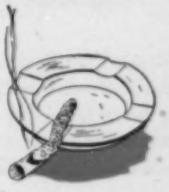

G-E TEXTOLITE can't be harmed by alcohol, food acids, disinfectants, boiling water . . . resists scratches better than low-carbon steel . . . resists blistering from heat.

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to fit distinctive design

Foreground of main office area, S. C. Johnson Co., Racine, Wisconsin, Frank Lloyd Wright, architect.

IN KEEPING with the distinctive design and functional purpose of this modern office building, the floors are Wright Rubber Tile. This modern flooring possesses a lasting beauty, a quiet surface, a gleaming finish and a resistance to scuffing, stain, wear or denting that is almost unbelievable. Futhermore, its non-porous surface makes for the easiest maintenance — the lowest cost upkeep.

Wright Rubber Tile is recognized as *the quality floor.* This tile is uniformly cured, and molded by the most modern processes. No polishing or buffing is used to give it a velvety luster. Because it retains the flexibility and resiliency of its rubber content, its quietness, its durability, its long-time foot comfort, and its resistance to chipping and cracking, go without saying. For complete information on this modern, distinctive flooring for homes, offices, buildings or stores, see your nearest dealer or contractor or write direct to Taylor Mfg. Co., 3074 W. Meinecke Ave., Milwaukee 10, Wis.

WRIGHT RUBBER TILE
Floors of Distinction

THE RECORD REPORTS

(*Continued from page 18*)

and design of reinforced tile-concrete beams.

Virginia Polytechnic Institute — effect of brick texture on the bond between the brick and the mortar used in building walls; both smooth and rough brick finishes being tested with various mortar formulas.

University of Minnesota — moisture resisting properties of structural facing tile.

University of Illinois — factors affecting variations in the sizes of brick and tile.

Iowa State College — factors affecting lamination of structural clay products.

New York State College of Ceramics — methods of manufacturing the new modular sizes of brick from soft clay.

North Carolina State College — development of light weight structural clay products.

National Bureau of Standards — use of de-aired clay in the manufacture of brick and tile.

Library on Housing

The library on housing belonging to the late Mrs. Edith Elmer Wood, noted pioneer in public housing in the United States, has been given jointly to the New School for Social Research, New York City, and to the Avery Library of Columbia University by Mrs. Wood's sons, Dr. Horace E. Wood II and Dr. Albert E. Wood. The collection consists of books and journals on public housing, and a quantity of pamphlet material; the New School's share runs to at least a thousand items.

Residential Construction

"Housing Research at Work" will be the theme of the third annual Short Course in Residential Construction for Contractors and Builders to be given at the University of Illinois on Feb. 17–18.

The course will center around housing research being carried on at the University, and is being sponsored jointly by the Small Homes Council and the Division of University Extension.

Highlighting the program will be reports on the Industry-Engineered House, seven of which have been built by the University. Another subject will be the construction of concrete slab floors.

Registrations and requests for information are being handled through the Division of University Extension, Urbana.

New Engineering Curricula

A new approach to engineering education has been proposed by Dean Thorndike Saville of New York University's

(*Continued on page 22*)

Specify Corning Lighting Glassware!

OUT of Corning Research has come a complete line of scientifically designed lighting glassware to meet *your* exacting needs. Backed by decades of experience in illuminating engineering, Corning employs every technical and scientific advancement in producing *quality* lightingware for incandescent and fluorescent fixtures for both commercial and residential applications. Almost every lighting problem can be solved easily and effectively with Corning products.

To bring you up-to-date on these latest Corning developments, five new bulletins have been prepared. They are ready for you now. Covering the characteristics, applications and specifications of each type of ware, they will give you valuable aid in planning your next lighting layout or fixture design.

NEW BULLETINS NOW AVAILABLE!

Bulletin LS-7 describes ALBA-LITE, Corning's new diffusing glassware; Bulletin LS-8, FLUR-O-GUIDE Lens Panels for directing fluorescent light; Bulletin LS-9, PYREX brand Lenslites for directing incandescent light; Bulletin LS-10, MONA-LITE, a new, dense opal glass for low transmission and high reflection; LS-12, Corning Residential Lightingware. Any one or all of these bulletins available on request. Use coupon now!

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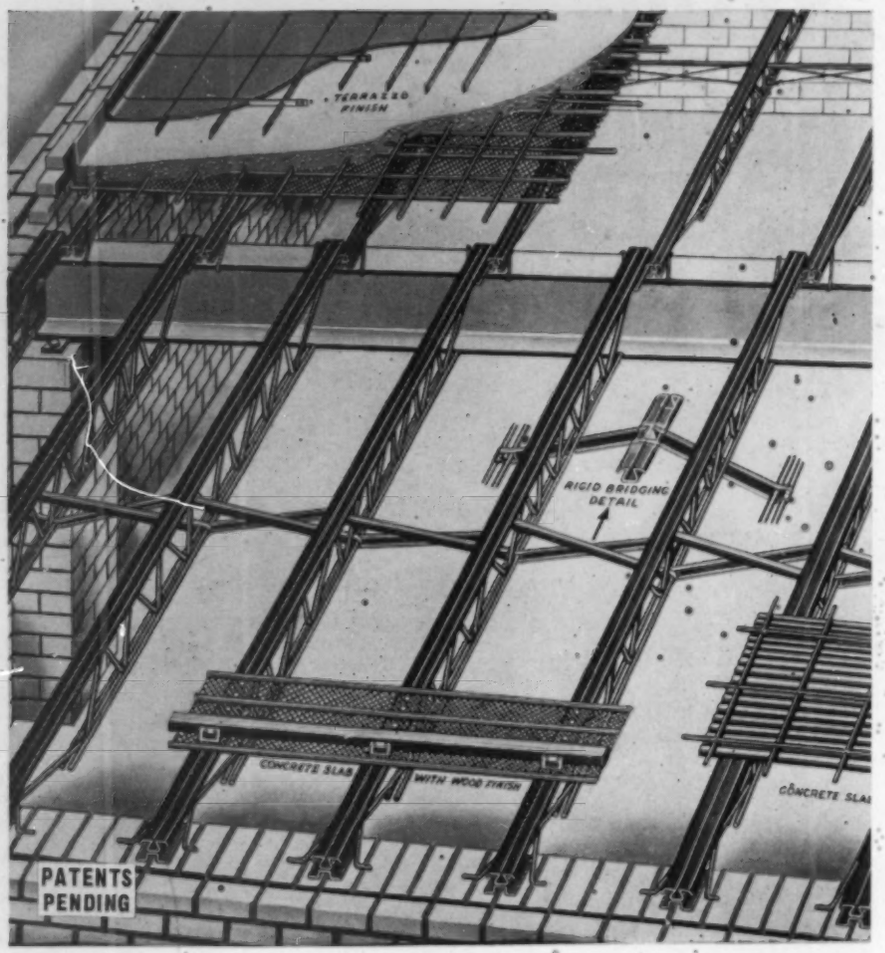

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STANDARDIZED STEEL BUILDING PRODUCTS

THE RECORD REPORTS

(*Continued from page 20*)

College of Engineering.

Under the Dean's plan a general four-year course would be established which substantially all engineering students would take. It would be uniform, or nearly so, for the first three years, and would lead to the degree of Bachelor of Engineering. The first three years would have all of the basic sciences and fundamental engineering subjects now offered, but would add courses in history, public affairs and economics. The senior year would have a considerable number of electives, designed on the one hand for those who expect to terminate their technological engineering education in four years, and on the other for those who will take a fifth year of specialized programs leading to the degrees of A.E., C.E., M.E., E.E., etc.

Chicago Takes Over Laboratory

Effective January 1, 1948, all responsibility for the operation of Clinton Laboratories was transferred from the Monsanto Chemical Company to the University of Chicago, which is operating the Laboratory under the name of "Clinton National Laboratory."

TWO FELLOWSHIPS IN ARCHITECTURE OPEN

University of Michigan

The College of Architecture and Design, University of Michigan, has announced that the George G. Booth Traveling Fellowship in Architecture will be offered again this year, and the competition in design will be conducted during the two weeks beginning April 3, 1948. This competition is open to all graduates of the school who have not reached their 30th birthday on that date. Prospective candidates should write immediately to the office of the College of Architecture and Design, University of Michigan, Ann Arbor, Mich.

Princeton University

The School of Architecture, Princeton University, has announced the availability of the Lowell M. Palmer Fellowship in Architecture. Offering a year of advanced study at Princeton, and a stipend of $700, the Fellowship is open to candidates holding a Bachelor's degree, who are citizens of the United States, and less than 27 years of age on October 1, 1948. Applications for appointment, together with supporting documents, must be received not later than March 1, 1948. Application blanks may be obtained from the Secretary, School of Architecture, Princeton University, Princeton, N. J.

(*Continued on page 152*)

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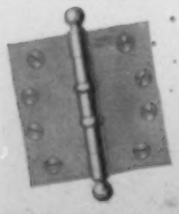

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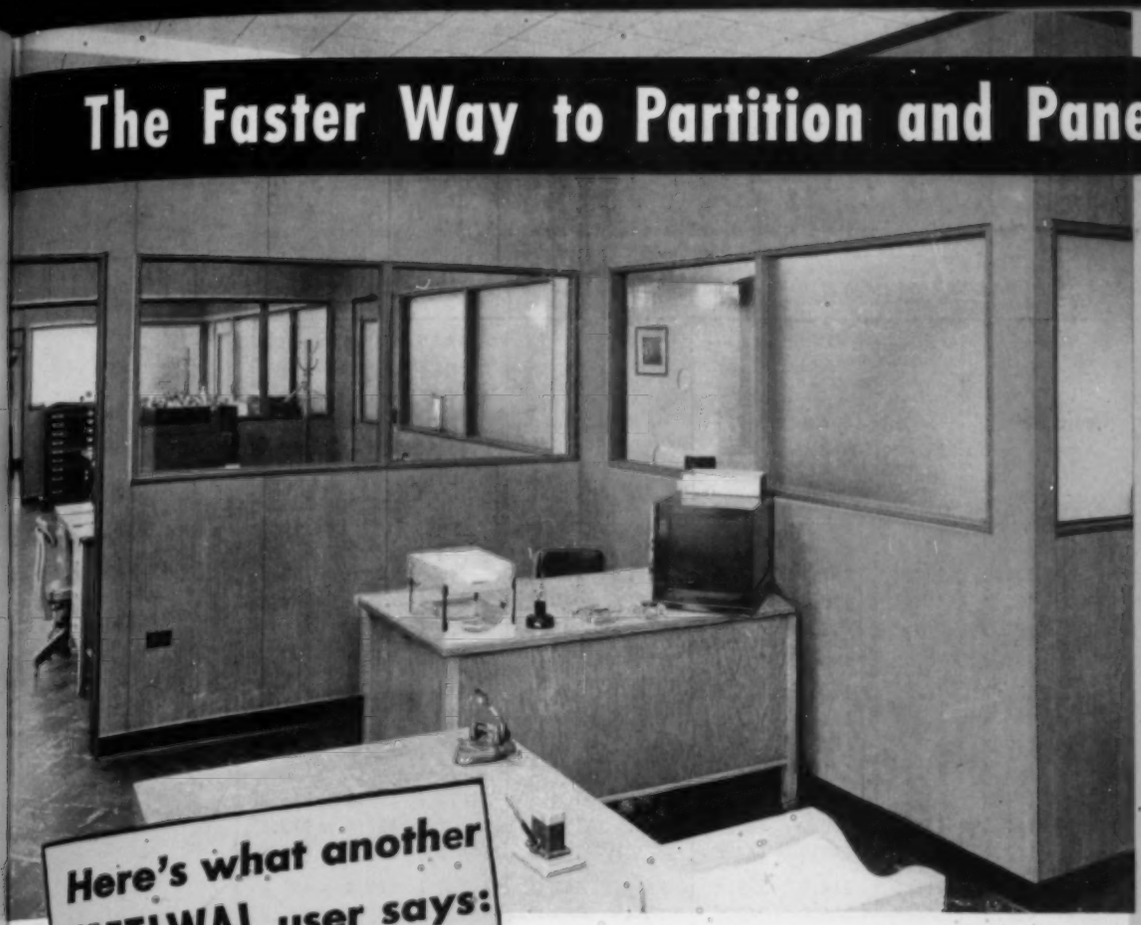

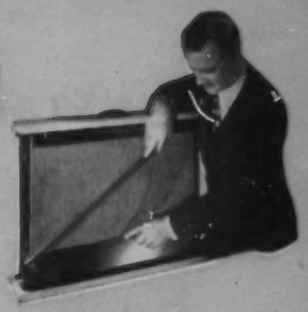

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CONSTRUCTION COST INDEXES — Labor and Materials

United States average 1926—1929 = 100

Presented by Clyde Shute, manager, Statistical and Research Division, F. W. Dodge Corporation, from data compiled by E. H. Boeckh & Associates, Inc.

NEW YORK

Period	Residential		Apts., Hotels, Office Bldgs.	Commercial and Factory Buildings	
	Brick	Frame	Brick and Concr.	Brick and Concr.	Brick and Steel
1920	136.1	136.9	123.3	123.6	122.6
1925	121.5	122.8	111.4	113.3	110.3
1930	127.0	126.7	124.1	128.0	123.6
1935	93.8	91.3	104.7	108.5	105.5
1939	123.5	122.4	130.7	133.4	130.1
1940	126.3	125.1	132.2	135.1	131.4
1941	134.5	135.1	135.1	137.2	134.5
1942	139.1	140.7	137.9	139.3	137.1
1943	142.5	144.5	140.2	141.7	139.0
1944	153.1	154.3	149.6	152.6	149.6
1945	160.5	161.7	156.3	158.0	155.4
1946	181.8	182.4	177.2	179.0	174.8
Aug. 1947	225.5	227.1	215.5	214.9	209.4
Sept. 1947	225.9	227.5	216.4	216.0	210.4
Oct. 1947	228.7	231.0	218.5	217.4	213.8
Nov. 1947	229.1	231.4	219.0	217.8	214.2
	% increase over 1939				
Nov. 1947	**85.5**	**89.0**	**67.6**	**63.2**	**64.6**

ATLANTA

Period	Residential		Apts., Hotels, Office Bldgs.	Commercial and Factory Buildings	
	Brick	Frame	Brick and Concr.	Brick and Concr.	Brick and Steel
1920	122.8	122.9	108.6	109.8	105.7
1925	86.4	85.0	88.6	92.5	83.4
1930	82.1	80.9	84.5	86.1	83.6
1935	72.3	67.9	84.0	87.1	85.1
1939	86.3	83.1	95.1	97.4	94.7
1940	91.0	89.0	96.9	98.5	97.5
1941	97.5	96.1	99.9	101.4	100.8
1942	102.8	102.5	104.4	104.9	105.1
1943	109.2	109.8	108.5	108.1	108.7
1944	123.2	124.5	117.3	117.2	118.2
1945	132.1	133.9	123.2	122.8	123.3
1946	148.1	149.2	136.8	136.4	135.1
Aug. 1947	185.4	189.3	162.4	161.2	161.4
Sept. 1947	185.6	189.5	164.1	162.3	165.0
Oct. 1947	186.9	191.0	165.0	163.0	165.8
Nov. 1947	187.3	191.4	165.5	163.4	166.2
	% increase over 1939				
Nov. 1947	**117.0**	**130.6**	**74.0**	**67.7**	**75.4**

ST. LOUIS

Period	Residential		Apts., Hotels, Office Bldgs.	Commercial and Factory Buildings	
	Brick	Frame	Brick and Concr.	Brick and Concr.	Brick and Steel
1920	118.1	121.1	112.1	110.7	113.1
1925	118.6	118.4	116.3	118.1	114.4
1930	108.9	108.3	112.4	115.3	111.3
1935	95.1	90.1	104.1	108.3	105.4
1939	110.2	107.0	118.7	119.8	119.0
1940	112.6	110.1	119.3	120.3	119.4
1941	118.8	118.0	121.2	121.7	122.2
1942	124.5	123.3	126.9	128.6	126.9
1943	128.2	126.4	131.2	133.3	130.3
1944	138.4	138.4	135.7	136.7	136.6
1945	152.8	152.3	146.2	148.5	145.6
1946	167.1	167.4	159.1	161.1	158.1
Aug. 1947	207.0	208.6	189.9	189.4	190.1
Sept. 1947	207.5	209.0	191.2	190.8	192.3
Oct. 1947	210.7	213.0	192.2	191.5	193.4
Nov. 1947	212.1	214.0	193.6	192.5	194.5
	% increase over 1939				
Nov. 1947	**92.3**	**100.0**	**63.1**	**60.7**	**63.4**

SAN FRANCISCO

Period	Residential		Apts., Hotels, Office Bldgs.	Commercial and Factory Buildings	
	Brick	Frame	Brick and Concr.	Brick and Concr.	Brick and Steel
1920	108.8	107.5	115.2	115.1	122.1
1925	91.0	86.5	99.5	102.1	98.0
1930	90.8	86.8	100.4	104.9	100.4
1935	89.5	84.5	96.4	103.7	99.7
1939	105.6	99.3	117.4	121.9	116.5
1940	106.4	101.2	116.3	120.1	115.5
1941	116.3	112.9	120.5	123.4	124.3
1942	123.6	120.1	127.5	129.3	130.8
1943	131.3	127.7	133.2	136.6	136.3
1944	139.4	137.1	139.4	142.0	142.4
1945	146.2	144.3	144.5	146.8	147.9
1946	159.7	157.5	157.9	159.3	160.0
Aug. 1947	196.7	195.6	188.9	192.4	190.8
Sept. 1947	198.4	196.3	192.5	197.4	195.7
Oct. 1947	207.1	206.2	195.4	199.6	198.9
Nov. 1947	207.7	206.8	196.2	200.2	199.5
	% increase over 1939				
Nov. 1947	**96.8**	**108.3**	**67.0**	**64.2**	**71.2**

The index numbers shown are for combined material and labor costs. The indexes for each separate type of construction relate to the United States average for 1926–29 for that particular type — considered 100.

Cost comparisons, as percentage differences for any particular type of construction, are possible between localities, or periods of time within the same city, by dividing the difference between the two index numbers by one of them; i.e.:

index for city A = 110
index for city B = 95

(both indexes must be for the same type of construction).

Then: costs in A are approximately 16 per cent higher than in B.

$$\frac{110-95}{95} = 0.158$$

Conversely: costs in B are approximately 14 per cent lower than in A.

$$\frac{110-95}{110} = 0.136$$

Cost comparisons cannot be made between different types of construction because the index numbers for each type relate to a different U. S. average for 1926–29.

Material prices and wage rates used in the current indexes make no allowance for payments in excess of published list prices, thus indexes reflect minimum costs and not necessarily actual costs.

These index numbers will appear whenever changes are significant.

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REQUIRED READING

THE HOUSE YOU WANT

The House for You to Rent, Buy or Build. By Catharine and Harold Sleeper. Illustrations by Lombard Jones and Henry Diamond. New York (440 Fourth Ave.), John Wiley & Sons, Inc., 1948. 7½ by 10½ in. 295 pp. illus. $5.00.

Reviewed by TALBOT HAMLIN

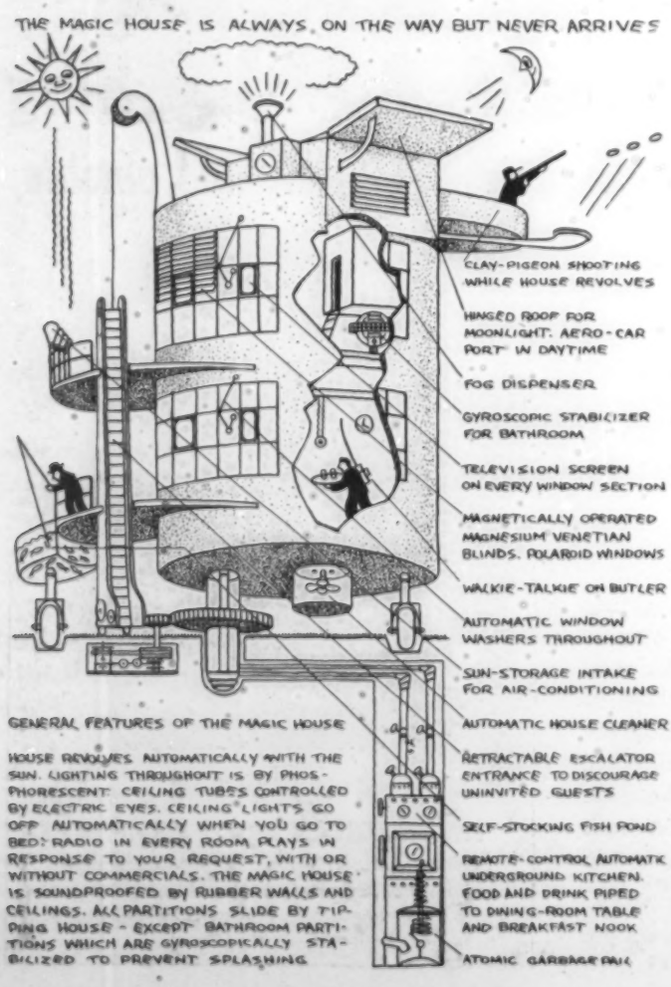
Mr. Sleeper has come to the rescue of the house seeker. His book is filled with trenchant comment on the pitfalls awaiting the unwary. Whether one is planning to rent, buy, or build, Mr. Sleeper's book gives warning, advice and enormous amounts of valuable information. It tells what danger signs to look for in renting or buying; it explains the value and place of the experts — bankers, real estate agents, and architects — and it gives, as few other books have given, a sufficient importance to site and community qualities as measures of the desirability of any proposed location.

Mr. Sleeper's chief emphasis is on building, though his advice as to who should build, and when, and how much should be spent, is realistic and wise; no one who reads this book should have any excuse for finding himself saddled with debts and maintenance costs out of proportion to his income. For those about to build he explains the tasks of the architect, and how the building of a house is a cooperative effort between architect and client. All of this is done in the simplest and most graphic manner, with frequent examples of conversations between architect and client and short tales of happy or disastrous experiences on the part of wise or foolish individuals.

Then follows a detailed consideration of all the factors that go to make up a house — planning, construction types, finishes, materials, equipment. Sections deal with planning for circulation and privacy, planning sleeping areas, and planning kitchens, and another section contains several pages of small "basic plans."

A certain kind of neutrality dictates the author's attitude toward "style" — a neutrality which some architects may feel is dangerous. The implications seem to be that "style" is an additional something applied over a selected room arrangement. Obviously this is not so.

(*Continued on page 30*)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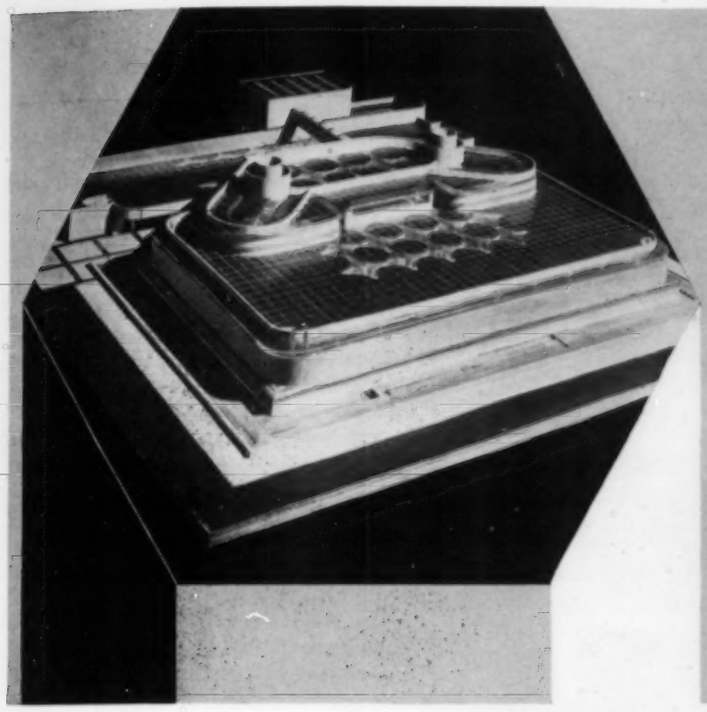
Illustrations on this page from "The House for You to Rent, Buy or Build"



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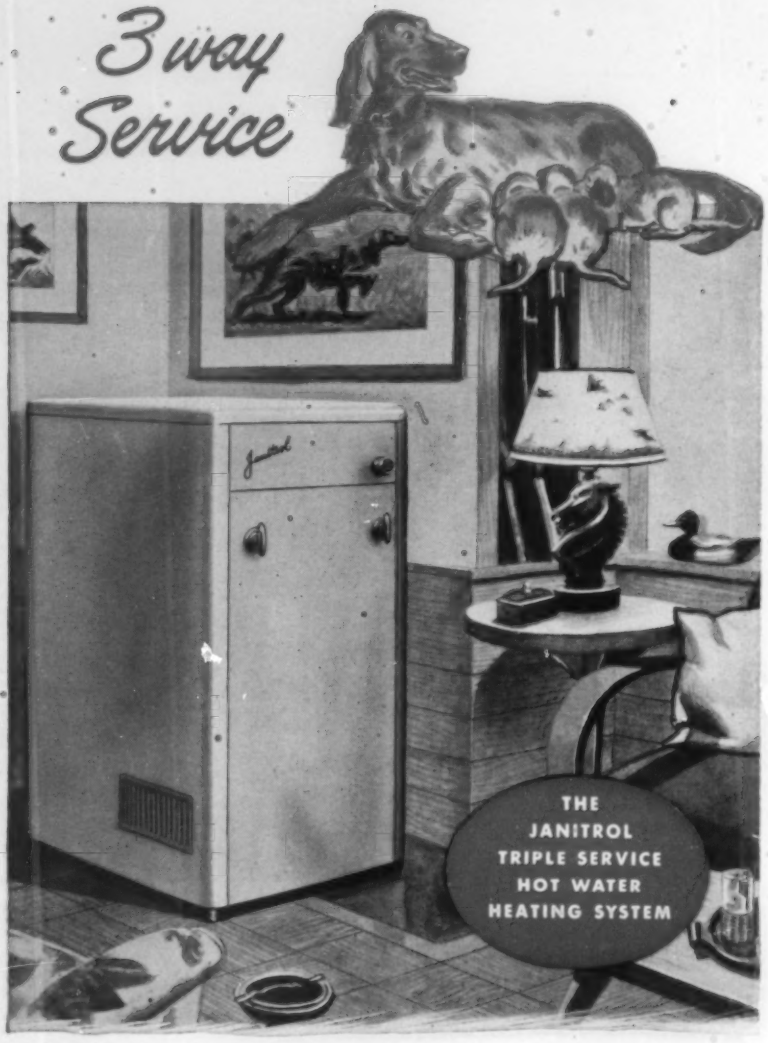

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REQUIRED READING

(*Continued from page 28*)

"Style" — Colonial or Spanish or modern or what not — is not the mere frosting on the cake. For style is the result of a whole series of decisions about mass arrangement — size, shape, and type of window and door; plan type; land usage; and so on — each one of which as vitally affects plan and basic conception as it does exterior appearance. It is a failure to recognize this basic architectural principle which makes our less expensive — and some of our more expensive — suburbs the visual shambles they are.

On the whole, this book is a major contribution to the houseless. Its writing is clear, definite, lively. Its illustrations are both witty and graphic and often make vivid use of a kind of cartoon technique. It is all easy to take, despite the wealth of detailed and even technical information. It should help many puzzled Americans to get more useful dwellings. But in this reviewer's opinion the book would have been still more valuable if the author had seized the opportunity to instill into his readers a few basic architectural principles such as the integration of use and form, of plan, interior, and exterior. That would have helped his readers attain not only more comfortable dwellings but houses which might have been examples of a vital architecture for today. For the best modern home is no mere question of style choice; it is the logical result of new living ways, new materials, and a new technology.

WHAT MAKES GOOD APARTMENTS?

Apartment Houses. By Joseph H. Abel and Fred N. Severud. New York (330 W. 42nd St.), Reinhold Publishing Corp., 1947. 8½ by 11½ in. 280 pp. illus. $10.00.

"To the owner, an apartment building is primarily a means of making money, either through sale or as an investment; to the occupant of one of its units, it is a home; and to the conscientious architect, desirous of doing his duty towards both client and tenant, it is an interesting and often difficult problem." In that succinct opening sentence, architect Joseph Abel has summed up the theme of this book; what follows in every section is aimed at the simultaneous satisfaction of both owner's and tenant's desires, and the consequent satisfaction of the architect. Mr. Abel sees no reason why everyone should not be happy.

Almost two-thirds of the book is given over to Mr. Abel's very competent discussion of the architectural design of the apartment house. A valuable adjunct to the text in this section is the inclu-

(*Continued on page 178*)

ARCHITECTURAL

RECORD

ON THE STATE OF THE NATION

REPORTS on the current "state of the nation" are still being debated: Where are we going? Where should we be going? What measures and means should be used to get there? The reports cover present conditions and proposed programs — political, economic, social — so why not architectural? Is there a significant change in architectural thinking? If so where is it leading us? Is there a threat to the hard-won acceptance of our ideas and ideals of architectural design? Is there an evolutionary, revolutionary or reactionary change abrewing? These questions are up for discussion this month at the Museum of Modern Art's symposium, "What is Happening to Modern Architecture?" with Lewis Mumford as moderator.

The state of the nation — in respect to architectural design — may turn out to be epitomized in the report on "the state of a notion," said "notion" being the established axiom, the revered law and the familiar slogan of Modern architecture — "Form Follows Function." With this thesis in mind (both conscious and subconscious) leading designers have brought about our present revitalized architecture, free of the trappings and trimmings of styles, concerned primarily with design to produce structures expressing simply and directly the physical enclosure of space so arranged and equipped as best to serve specific activities. The emphasis has been on the material and mechanical aspects of building. "Function" itself has been thought of largely in physical terms in the conscious effort to rid architecture of the over-emphasis on the stylistic and merely decorative use of form. Now that that effort has been so highly successful, architects can bend their efforts to a more all-inclusive concept of "function."

There is a growing trend toward an interpretation of the word "function" to include psychological as well as physical purposes and satisfactions, spiritual as well as mechanical needs and desires, human as well as engineering considerations as design criteria. These aspects of function are not mutually exclusive. Without sacrificing structural integrity and economy, form can meet spiritual and psychological needs, and it will, increasingly, in the hands of architects sensitive to human values and familiar with the effects of space in size, shape, scale and proportion — and of the materials, colors, textures and profiles of its enclosure.

This portends a new freedom to design, a greater scope for creative imagination, a new vitality and validity of form, an accelerated evolution of truly functional architecture in its broadest sense. To repeat,* we believe that "There is too much vitality and enthusiasm in our rising architectural talent to warrant any fear that their designs will be dry, and tight and circumscribed. We will see rather a new freedom, a new, more individual expression, brighter, more lively, juicy, and intensely human designs, sincere and studied in conception, bold and stimulating in execution." That to my mind is the state of the nation — form following function to the full.

* "Freedom to Design," page 65, ARCHITECTURAL RECORD, March, 1947.

Kenneth K. Stowell

EDITOR

Roger Sturtevant Photos

HEADQUARTERS AND "FRONT" FOR FOOD PROCESSING

Richmond Chase Office Building, San Jose, California

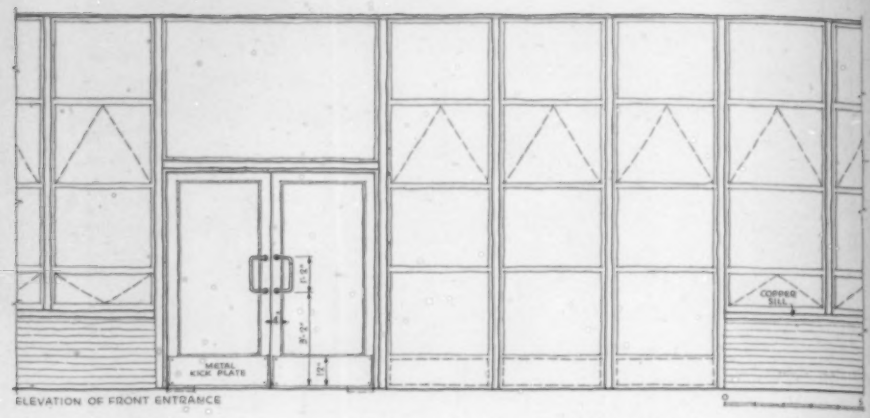
Wurster, Bernardi and Emmons, Architects

Landscaping by Thomas B. Church

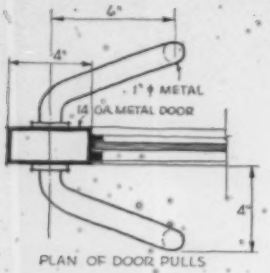
SITUATED on the main street of San Jose, this headquarters office building for one of the largest canning companies of the area, with packing plants spotted throughout the fruit growing district, was intended as a "front" and something of a trademark. It has a capacity of a hundred or more office staff, and the possibility of further expansion in the center toward the north. The garden area in back is for employee recreation, and a cafeteria will eventually be built here. The same architects once designed an office building for another canning company with striking use of horizontal wooden bargeboards as "shutters." The use of tan awnings here is equally gay and perhaps more direct and colorful under the copper facing of the roof overhang.

In the two small top views, the awnings may be seen pulled down — the architects say this saves expense of air conditioning. At right they are seen rolled up into the soffit of the overhang. Awnings are tan, pipe columns vermilion, overhang band copper-faced. Walled-in front gardens (right) give executives a pleasant outlook; chain link fences at ends let breezes through. For planting plan, back garden, see p. 90

Starting with the view at the upper right corner (the lobby), the photographer has led us back into the building. The second view reveals a second glass screen, opening a view into the spacious skylit interior. In the third (lefthand page), there is seen an adjoining row of outer offices occupied by executives, and, finally, in the two bottom views, the large central office room. Sash and doors are painted dark green, interior walls blue-gray (darker in outer offices). Lighting is fluorescent except for incandescent light in monitor coves. Floors are asphalt tile, ceilings acoustic tile on wood strips (4 in. of rock-wool insulation). Lobby walls and counters in general offices are finished in oak plywood; the sampling room (see plan overleaf) is in natural-finish vertical grain Douglas fir and has stainless steel counter tops. The broken planes of the skylight ceiling absorb noise



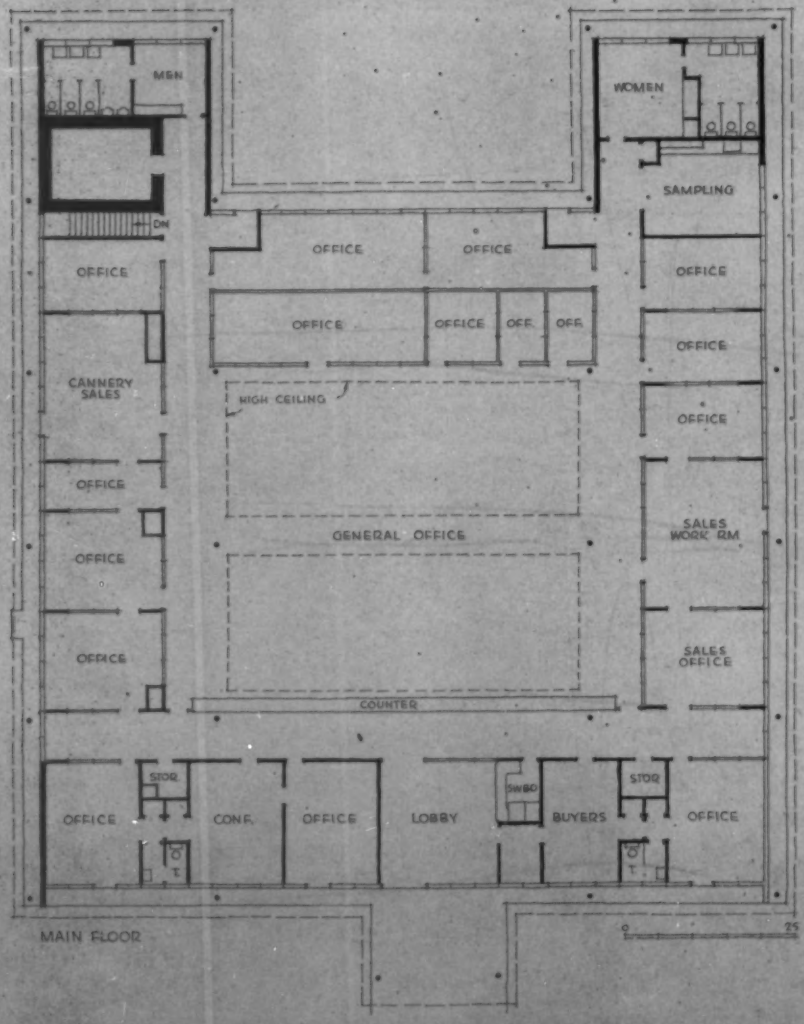
ELEVATION OF FRONT ENTRANCE



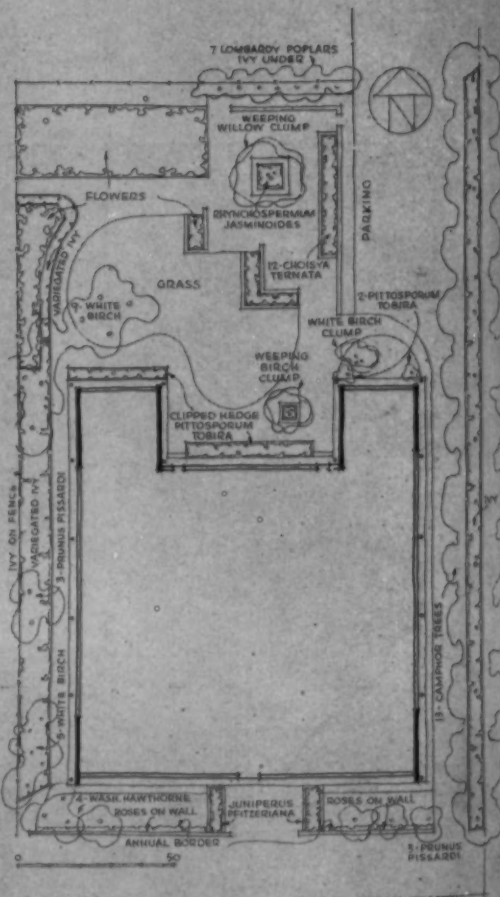
PLAN OF DOOR PULLS

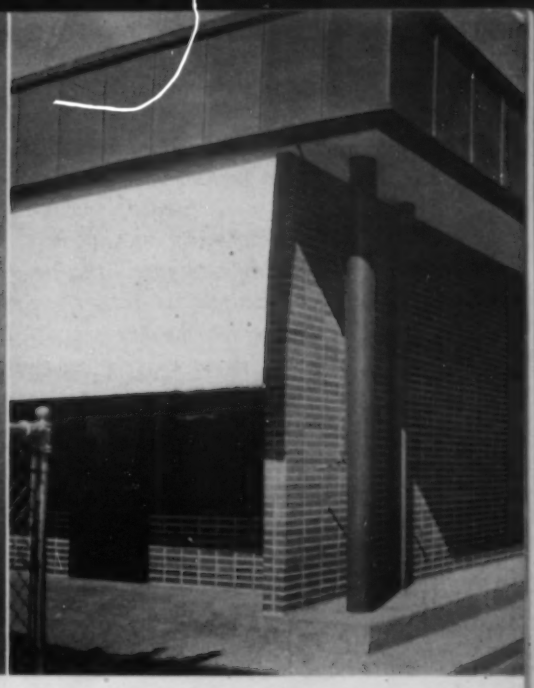
Above: Details of front curtain wall, seen in photo opposite page

Below: Building plan and plot plan. Building plan shows possibility of expansion in the center section. Points on this plan give a clear impression of the fact that the pipe columns are the only vertical elements in the building. Landscaping was by Thomas D. Church, whose planting plan is indicated in the right hand drawing

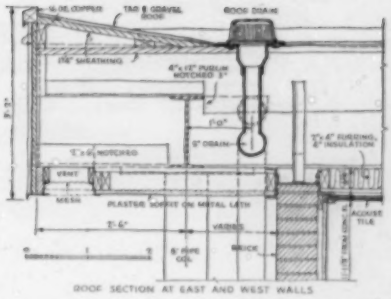


MAIN FLOOR

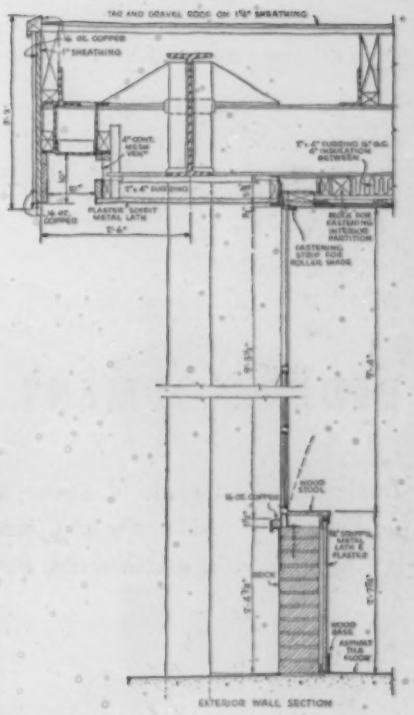




What with the awning above and the parapet wall below, to look at, the executive is given a pleasant view and no sky-glare to contend with. Vines to be added

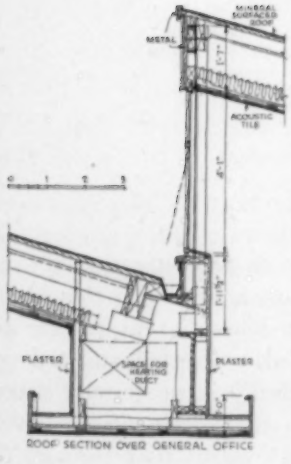


ROOF SECTION AT EAST AND WEST WALLS

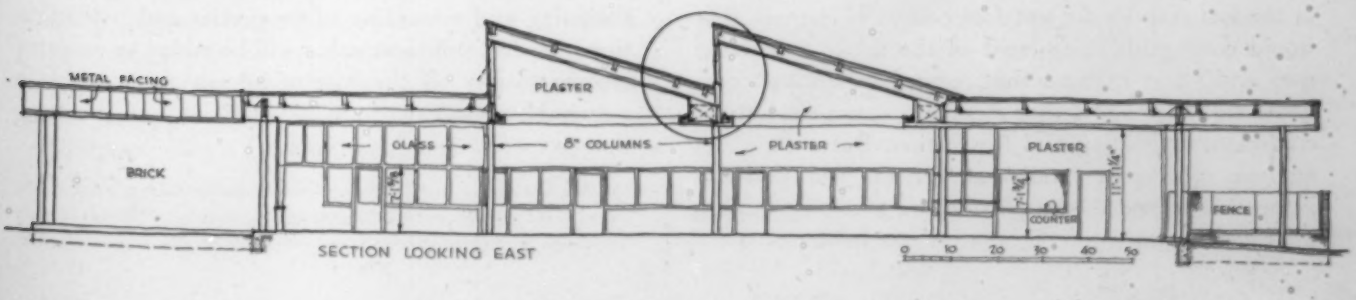


EXTERIOR WALL SECTION

Sawtooth monitor details have been carefully worked out so as to carry heating ducts for the forced warm-air (gas-fired) system and also to provide light-coves for the fluorescent lighting. The structural engineer was A. V. Saph, Jr., the mechanical engineer, James Gayner. The exterior pipe columns are firmly anchored in the concrete base — not only are pipe columns the only vertical supports but the long center span is a partial cantilever

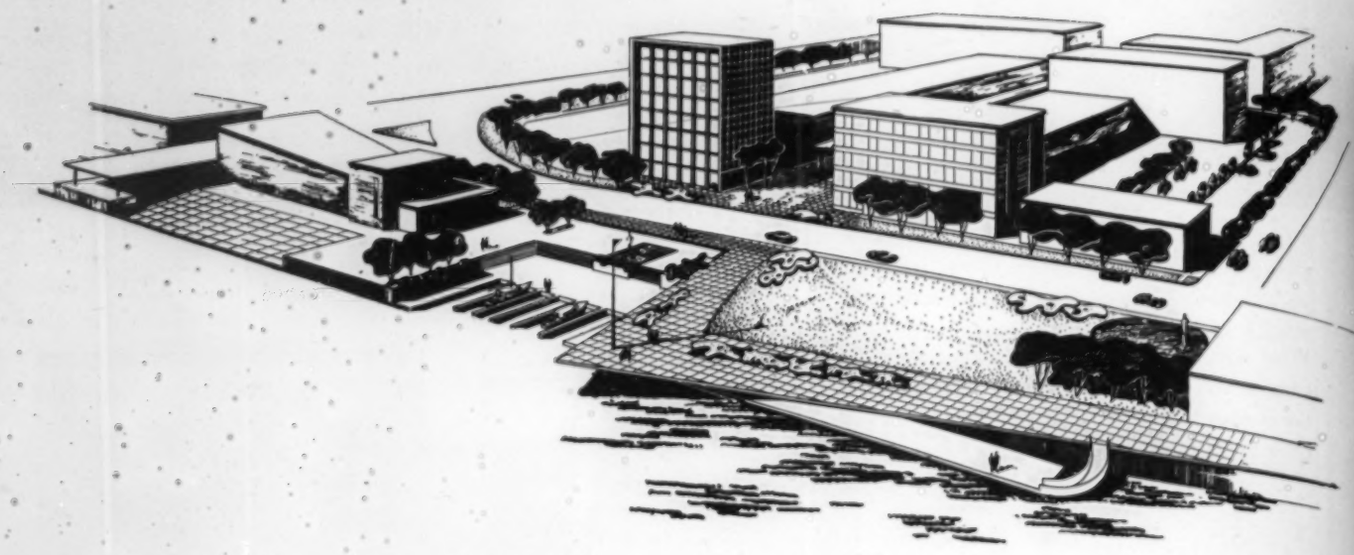


ROOF SECTION OVER GENERAL OFFICE



SECTION LOOKING EAST

View of the proposed waterfront development from across the Grand River. Recreational areas, public boat docks, pedestrian promenade, parking area, and a new auditorium and sports arena are planned for the waterfront, replacing unsightly warehouses and railroad yards. This new plan enhances the resort and tourist activities of Lake Michigan and coordinates them more closely with the city proper. The proposed waterfront development serves as one terminus of the shopping center



REDEVELOPMENT PLAN FOR GRAND HAVEN

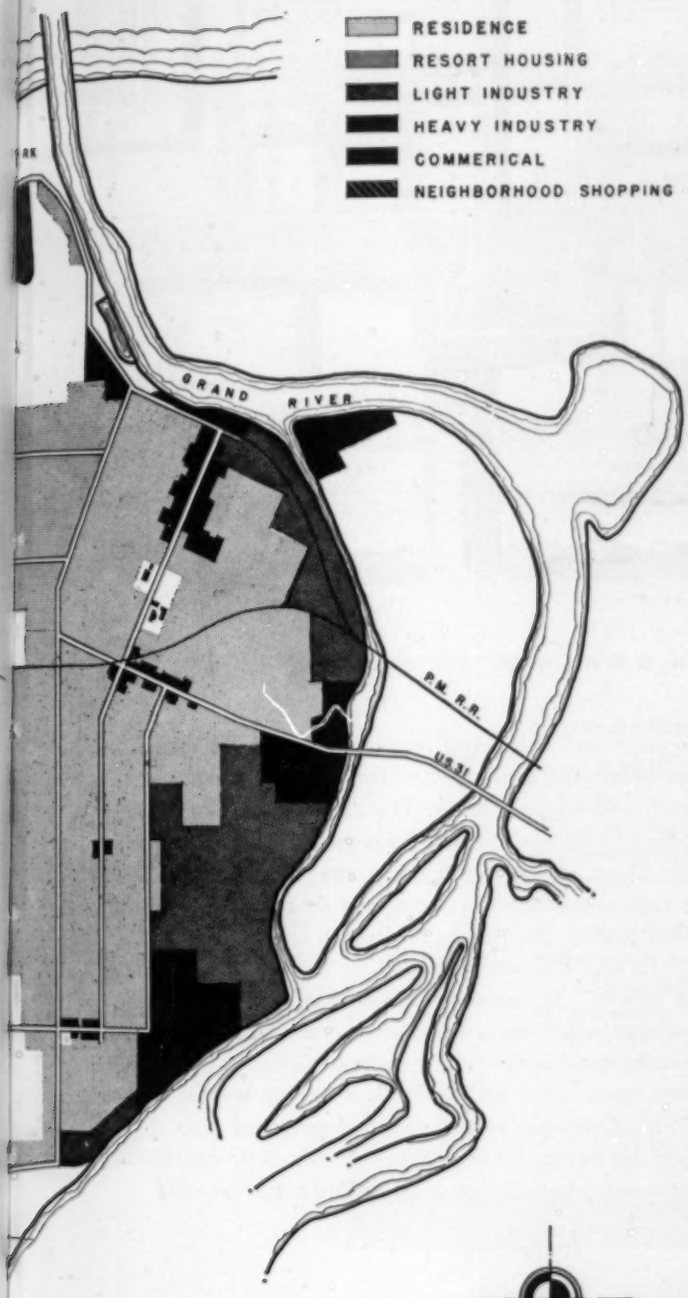
Designed by ***Orville H. Bauer, B.S. Arch.,*** ***University of Cincinnati***
Cité Universite, Paris

and ***Robert F. Van Hoef, B.S. Arch.***
University of Cincinnati
University of London

THE predicament of Grand Haven, Michigan, is not unique. Rather it is typical of a multitude of America's small cities. Blessed with more than usual natural advantages — lake, river, harbor, state park and land for expansion, Grand Haven has not begun to approach its own potentials for development. One hardly can blame the early settlers and those who followed them in the last century for not foreseeing the changes that would come with the advent of the motor age. Land uses and street systems that seemed logical and adequate for horse and buggy days now cause congestion, confusion, stagnation and frustration. But a thorough analysis of present conditions, present and probable future needs, and of the possibilities of a step-by-step improvement program show what can be done.

This study should prove an inspiration not only to Grand Haven but to many another city that finds itself in a similar plight, for it shows that most of the present facilities can be salvaged, converted and redeveloped practically and economically in progressive stages. As the report, from which these illustrations have been taken, states, "It seems evident that through the redesigning and rebuilding of properties and redistribution of space, sufficient value will be added to property income to pay off the cost of improvement within a reasonable period and to place investors . . . in a position to receive increased income."

The designers express their gratitude to Ernest Pickering, Dean of Applied Arts, University of Cincinnati, and to R. Marshall Rainey, Architect, Cincinnati Planning Commission, for their helpful advice and criticism

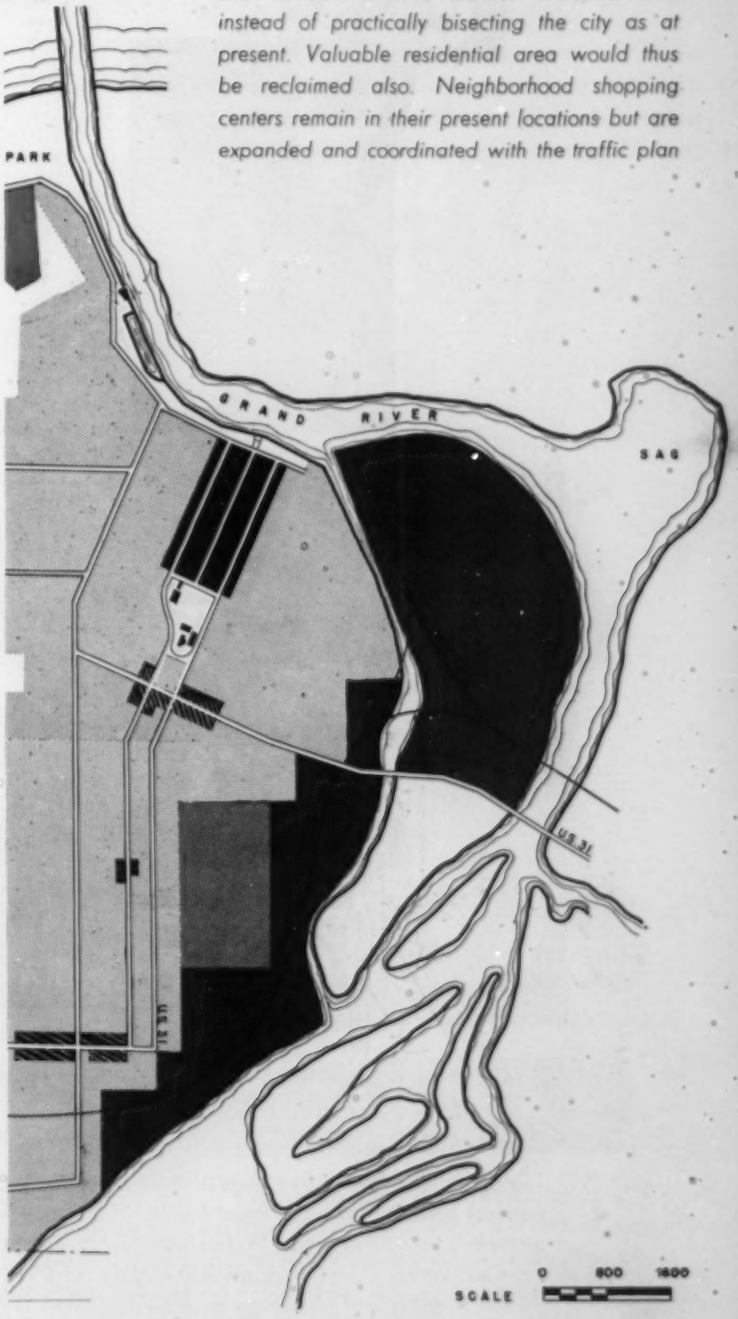


LAND USE

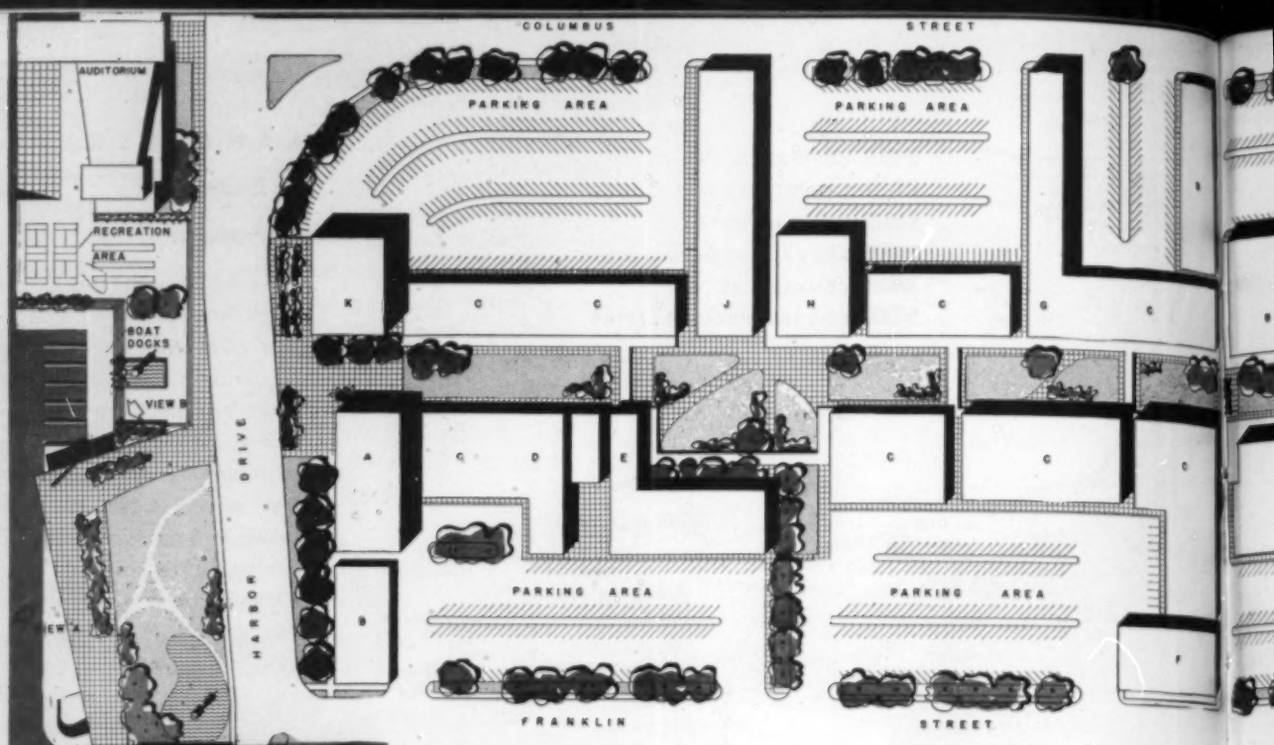
Existing

Proposed

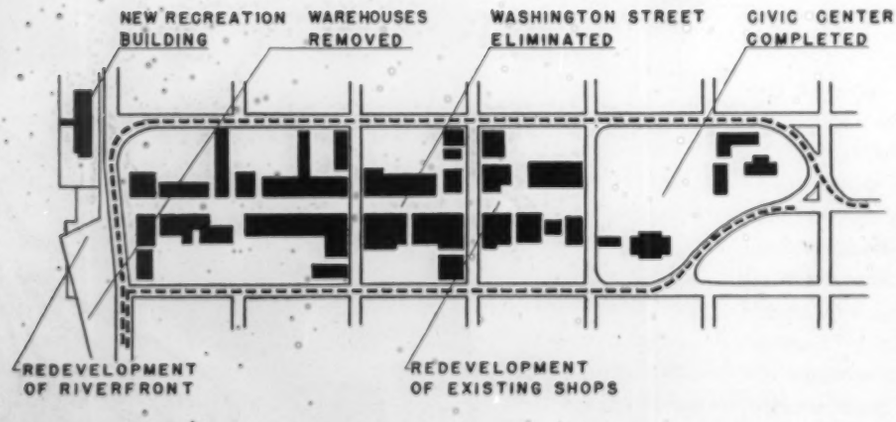
The commercial and shopping center (with added and adequate parking facilities) is here unified and given logical traffic arteries to facilitate circulation. It starts at the redeveloped recreational and park area along the Grand River and terminates at the southeast in the unified civic center where existing buildings remain in their present locations but are given proper setting in a park area surrounded by the traffic arteries. The industrial expansion of Grand Haven is provided for in its most logical location, adjacent to the Grand River to take advantage of shipping facilities. The railroad has been located to serve this new industrial area instead of practically bisecting the city as at present. Valuable residential area would thus be reclaimed also. Neighborhood shopping centers remain in their present locations but are expanded and coordinated with the traffic plan



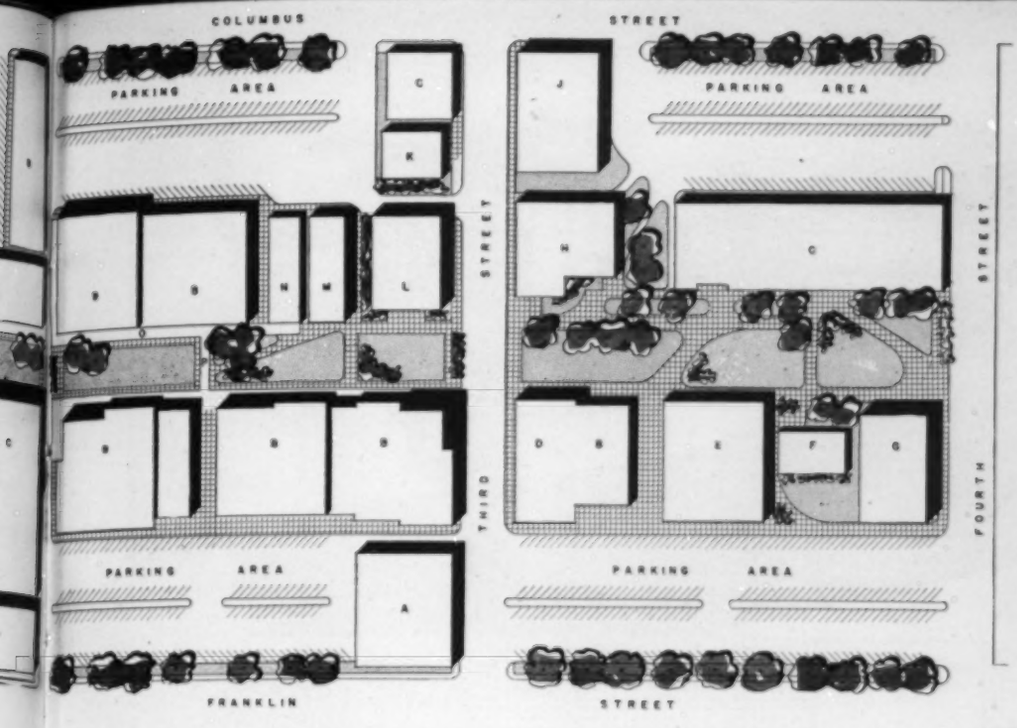
The advantages and the logic of the proposed replanning will be easily seen by a comparative study and analysis of the two plans shown — the existing land use and the proposed changes. While suggested changes may seem radical and daring at first glance, it is surprising that such valuable improvements can be made with a minimum of rebuilding. Existing areas are enhanced with a minimum of structural change and no major relocations of land use are involved with the possible exception of the removal of heavy industry adjacent to the commercial center along the Grand River to a more desirable location suitable for expansion on the island to the north



The major section of Grand Haven in this proposed redevelopment embraces the riverfront on the northwest, the commercial center, and the civic center. The plan below is a schematic diagram of the final stage of the proposed redevelopment. The plans above and on the opposite page show in greater detail the proposed changes in streets and their uses, the splendid added parking facilities and the location both of existing stores, theaters, and other buildings and the proposed new buildings and facilities. By converting Washington Street from a badly congested traffic area to a pedestrian promenade with extensive canopies, and by providing for traffic on Columbus and Franklin Streets, a pleasant and profitable shopping area is created instead of an ugly, inconvenient and congested area. Traffic would thus be rerouted around the new civic center and shopping district, with about 1300 off-street parking places provided



The diagram of the finished stage of the development above shows the loop traffic route circling the civic center and business area. Washington Street has become a planted promenade where customers may shop in quiet, weather-protected, traffic-free areas. Houses and minor buildings in back of the stores on Columbus and Franklin Streets have been eliminated to provide convenient parking areas. At the left the riverfront has been redeveloped and a new recreation building and auditorium have been added. The civic center has been unified by the elimination of streets



SHOPPING AREA B

Key to A (Above left)

A. Schuler Hotel
B. Proposed Shops
C. Existing Shops
D. Salvation Army
E. Grand Theater
F. Armory
G. Bowling Alley
H. Proposed Department Store
J. Story & Clark Company
K. Proposed Chamber of Commerce

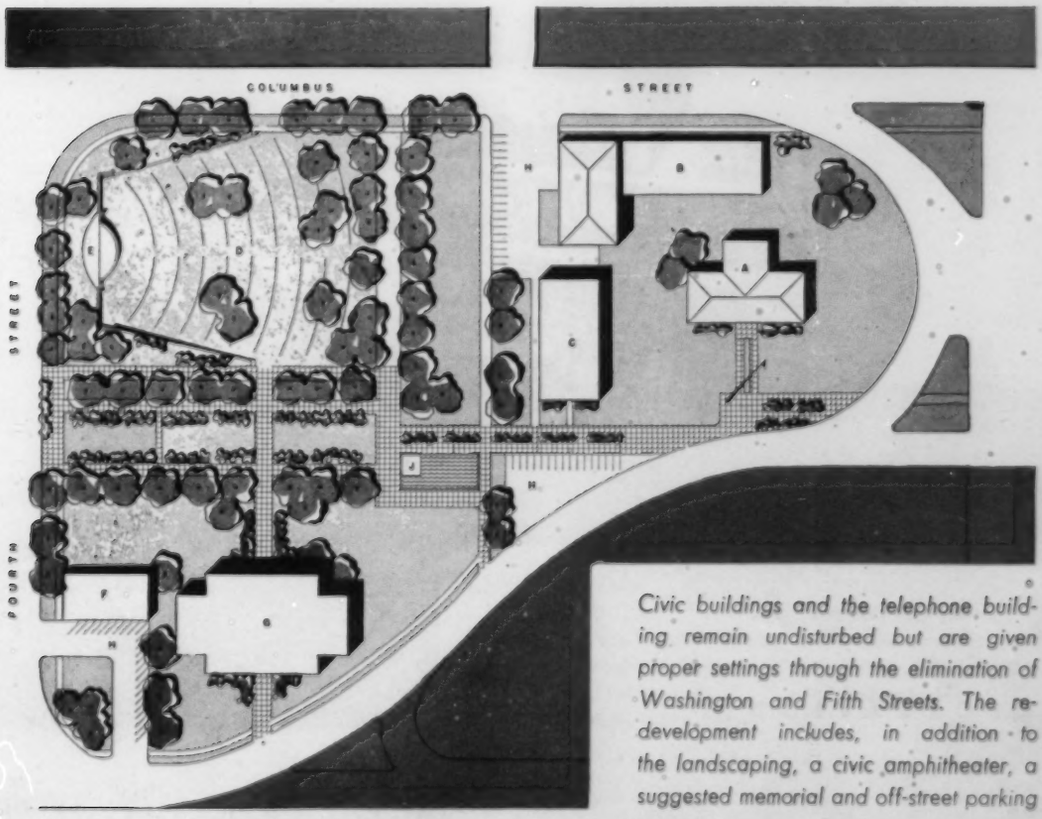
Key to B (Above)

A. Elks Lodge Hall
B. Existing Shops
C. Proposed Shops
D. Peoples Savings Bank
E. Proposed Private Club
F. Women's Club
G. Methodist Church
H. First Reform Church
J. Ford Motor Sales
K. Public Library
L. Post Office
M. State Bank
N. Robinhood Theater
O. Covered Shopping Area
P. Covered Cross Walk

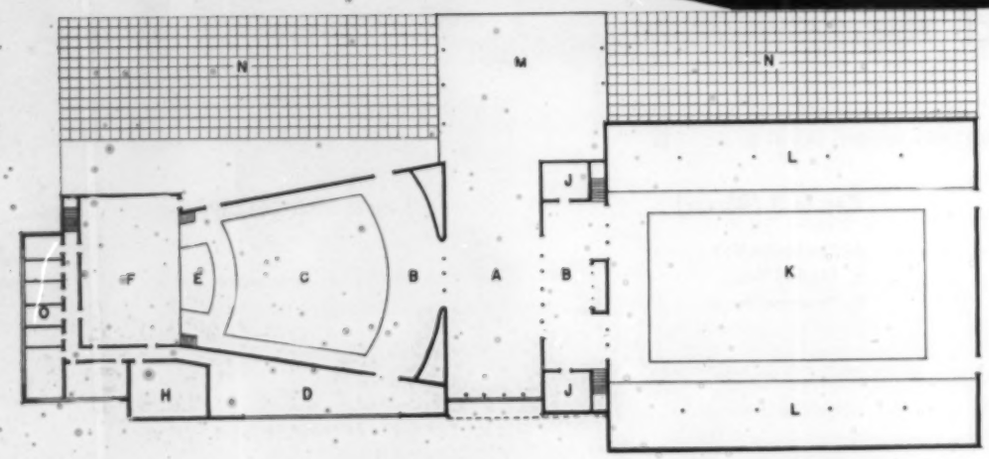
Key to Plan (Below)

A. City Hall
B. City Fire Department
C. Bell Telephone Building
D. Amphitheater
E. Band Shell
F. County Jail
G. County Court House
H. Parking Area
J. Memorial

CIVIC CENTER

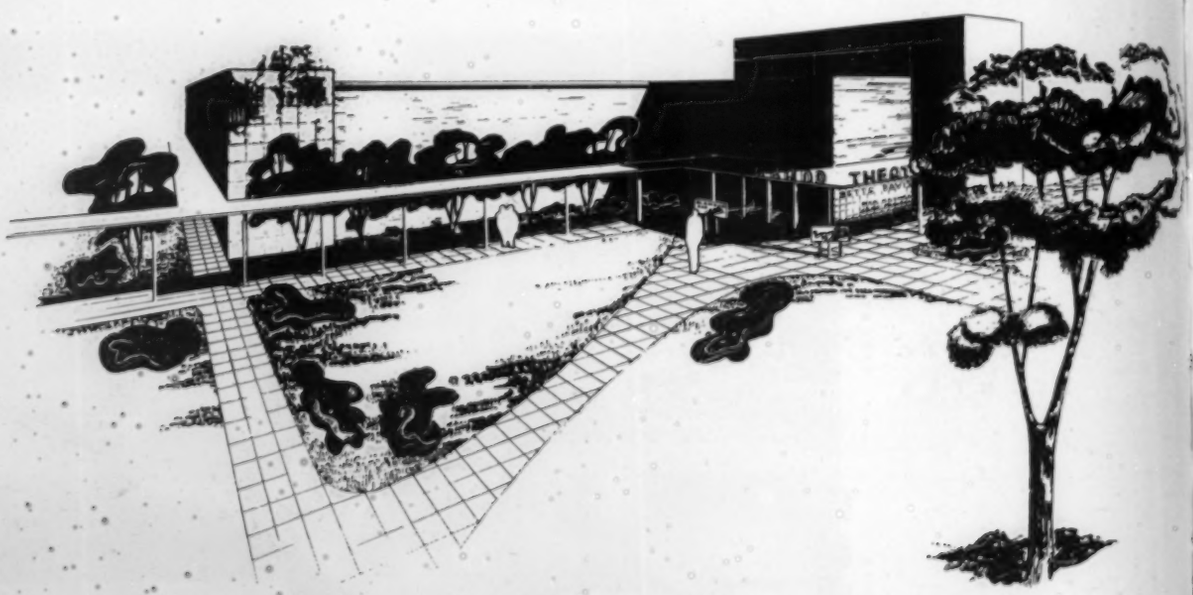


Civic buildings and the telephone building remain undisturbed but are given proper settings through the elimination of Washington and Fifth Streets. The redevelopment includes, in addition to the landscaping, a civic amphitheater, a suggested memorial and off-street parking



A. ARCADE
B. FOYER
C. AUDITORIUM 1200 SEATS
D. GREEN ROOM
E. ORCHESTRA
F. STAGE
H. WORK ROOM
J. OFFICE
K. ARENA
L. SPECTATORS 1500 SEATS
M. OPEN AIR DANCING
N. DOCK TERRACE
O. DRESSING ROOMS

Recreational facilities proposed for the riverfront include an auditorium and a sports arena



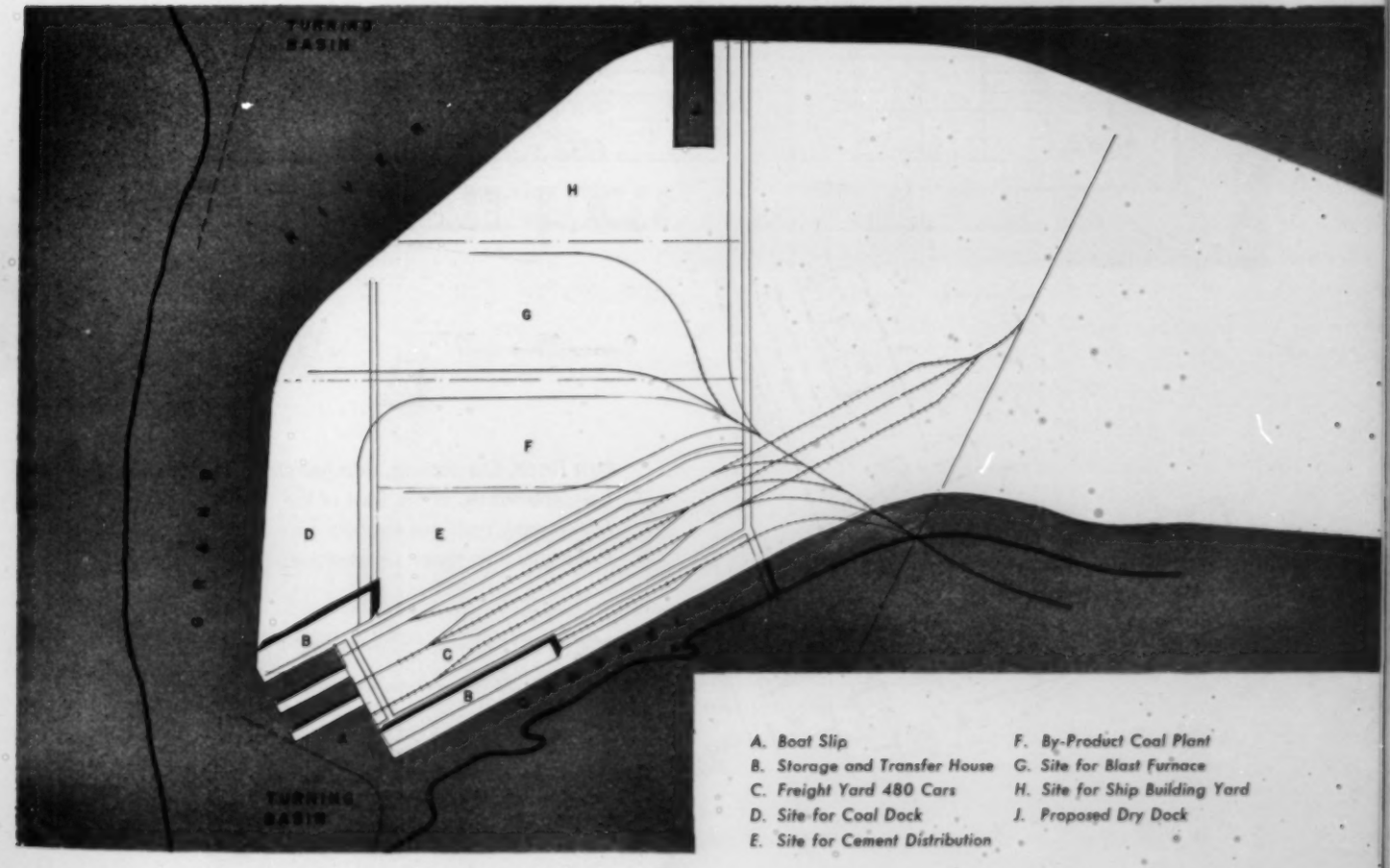
Sketch of proposed treatment of the Grand Theater (shown on plan page 95 at E)

SHOPS

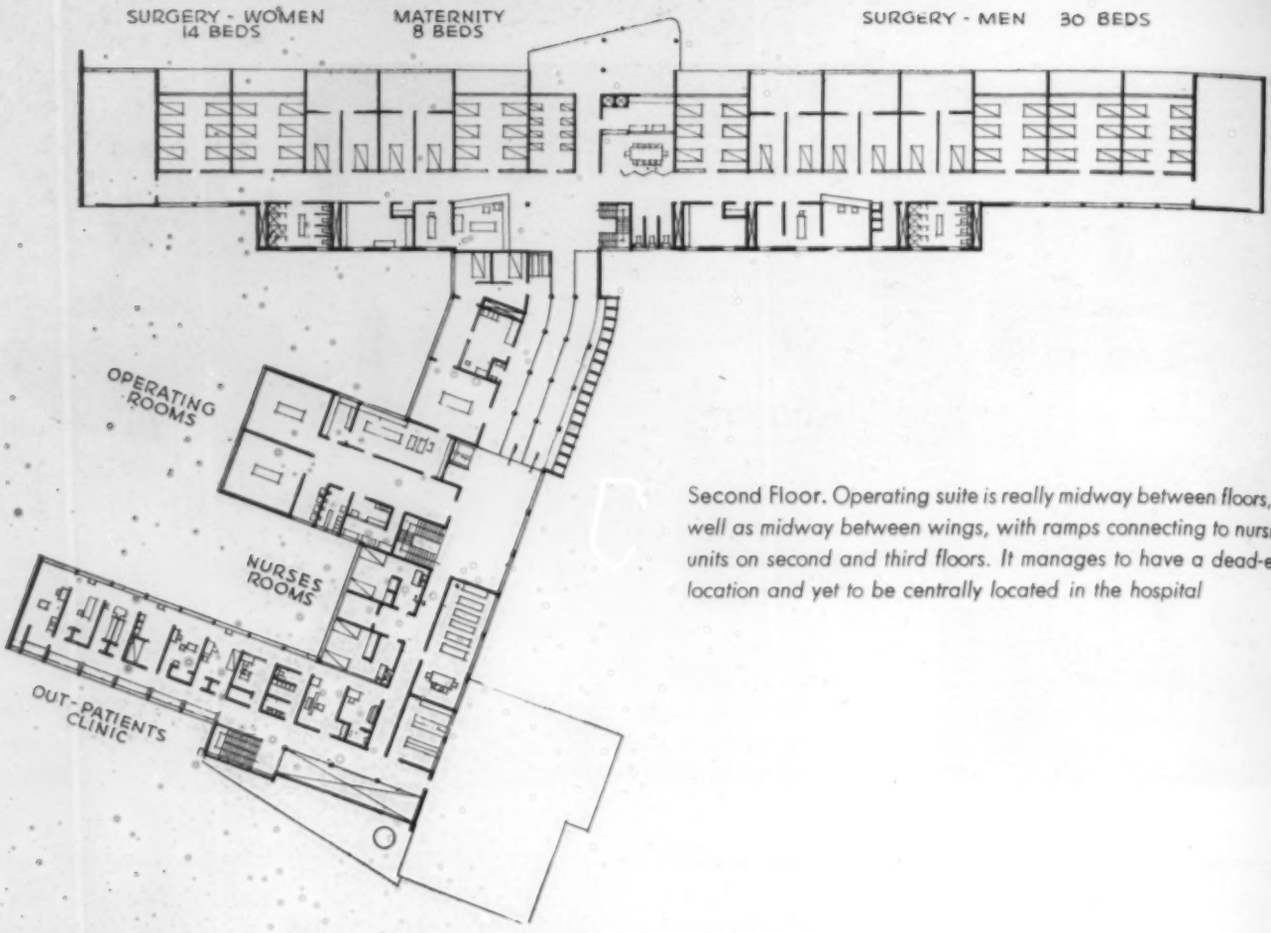
Washington Street, shown in its present condition in the inset at the left, would be converted into a planned promenade for shoppers and the store fronts would be redesigned for more effective merchandising. Covered canopies extend 12 ft. from the stores

INDUSTRIAL

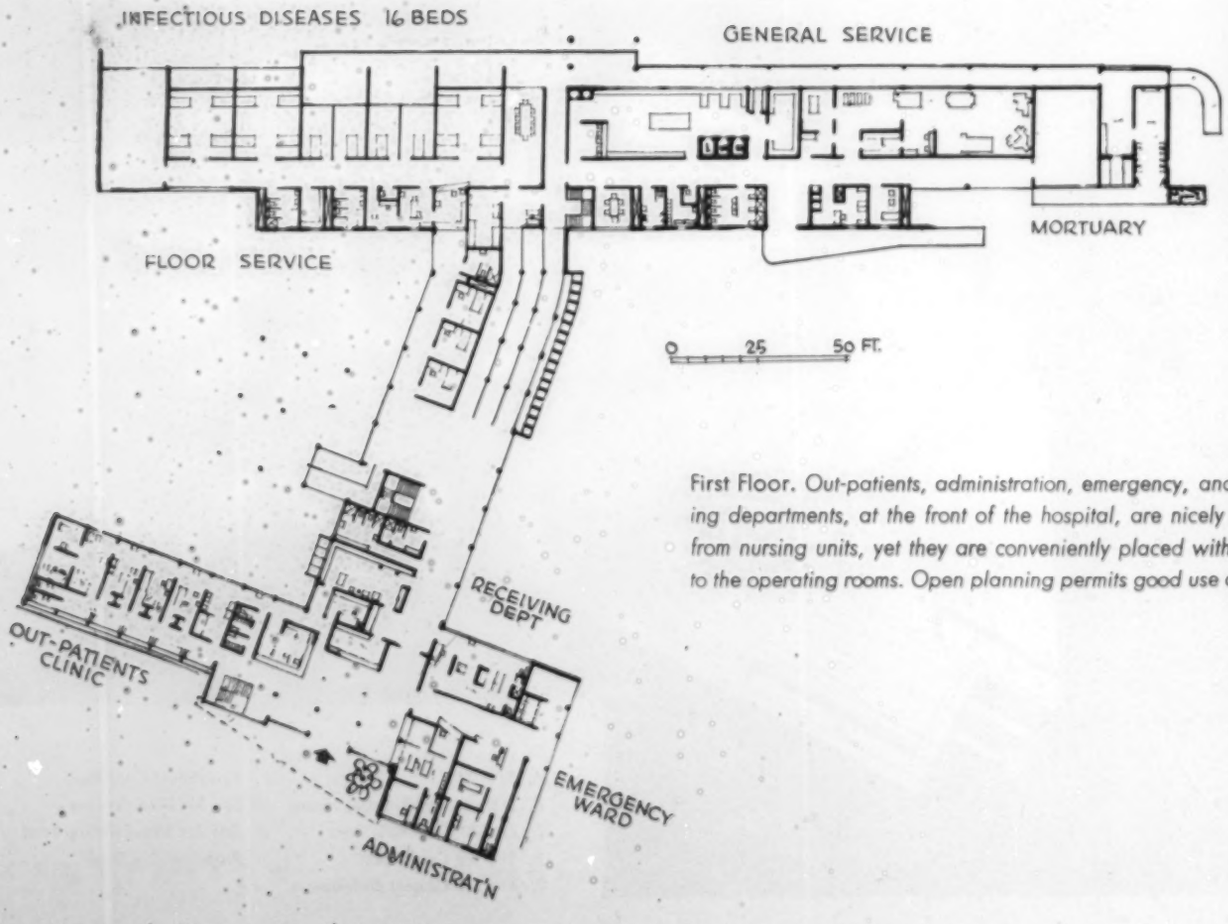
Grand Haven's industrial expansion is well provided for by utilizing the island for industrial sites and railroad and dock facilities. Thus, Grand Haven could function as a receiving point of both the Saint Lawrence seaway and western United States



A. Boat Slip
B. Storage and Transfer House
C. Freight Yard 480 Cars
D. Site for Coal Dock
E. Site for Cement Distribution
F. By-Product Coal Plant
G. Site for Blast Furnace
H. Site for Ship Building Yard
J. Proposed Dry Dock



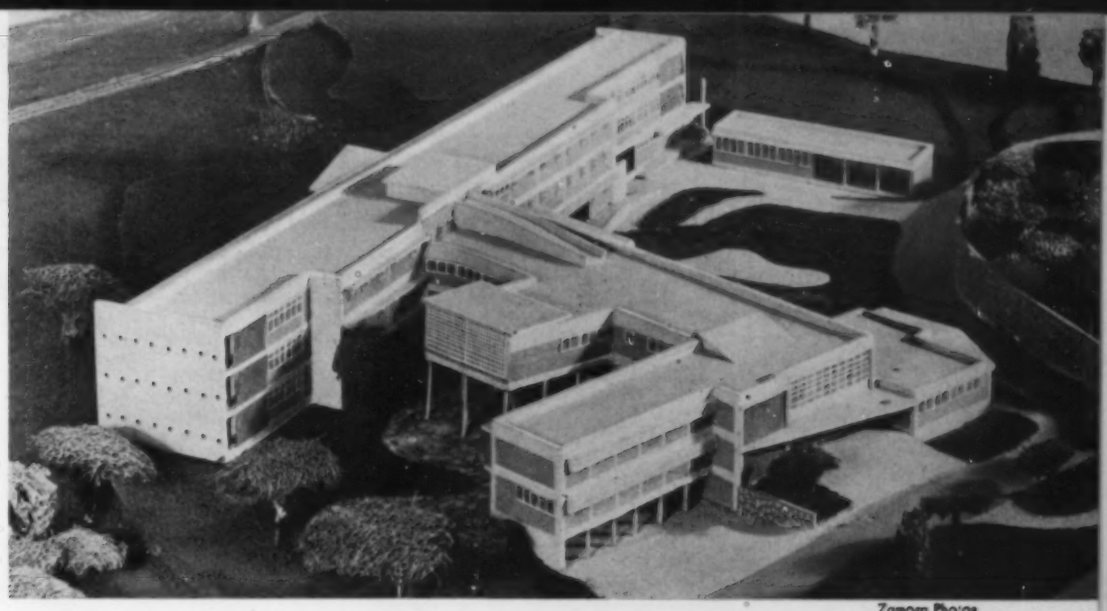
Second Floor. *Operating suite is really midway between floors, as well as midway between wings, with ramps connecting to nursing units on second and third floors. It manages to have a dead-end location and yet to be centrally located in the hospital*



First Floor. *Out-patients, administration, emergency, and receiving departments, at the front of the hospital, are nicely isolated from nursing units, yet they are conveniently placed with respect to the operating rooms. Open planning permits good use of ramps*

Antonio Prastana,
Architect;

Dr. Ignacio Mora,
Medical Consultant

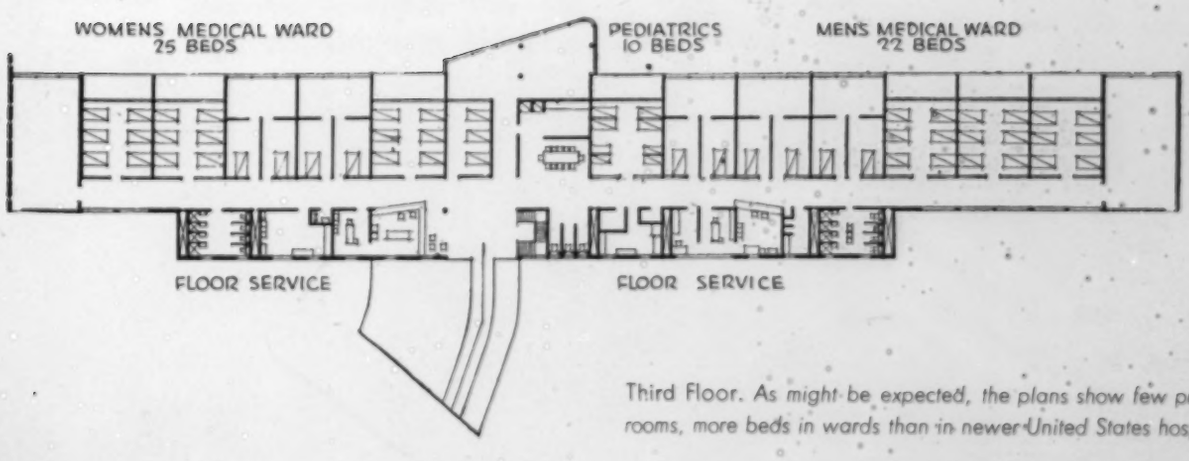


Zamora Photos

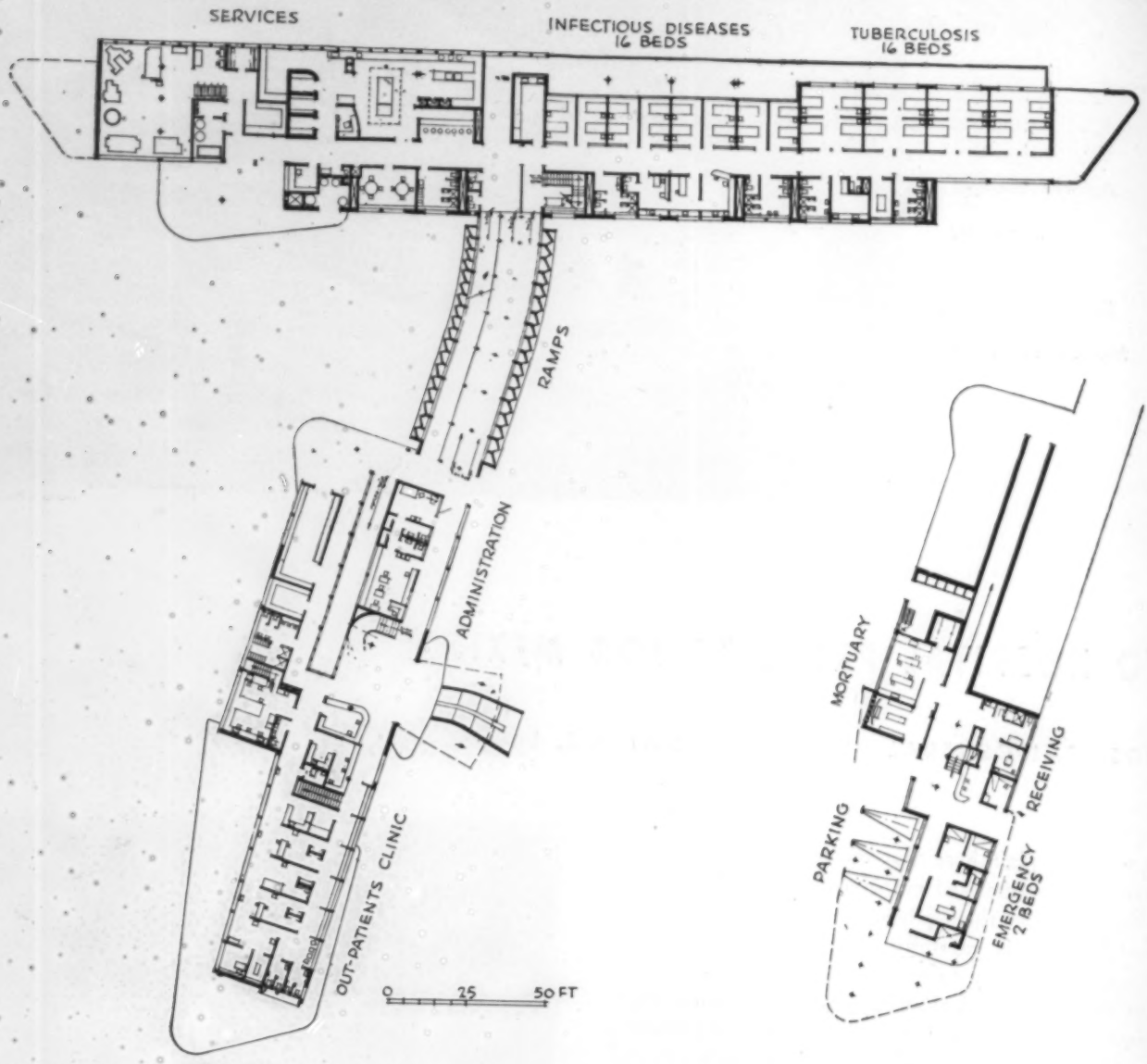
TWO HOSPITAL PROJECTS FOR MEXICO

1. HOSPITAL GENERAL DE COATZACOALCOS, VERACRUZ

IT is perfectly plain here that the free imaginativeness that has characterized much recent work in Mexico is finding its applications in hospital design. This 127-bed general hospital is carefully studied for best placing with respect not only to sun but also to cooling winds, for the climate is tropical and humid. These plans place the nursing units to the northeast to give bed patients the cool breeze. Many planning principles familiar in the United States are seen, such as central services, cul de sac locations for operating suites, good isolation of nursing units. The ramp arrangements are especially notable: the operating wing is really a mezzanine location, giving equally good accessibility to two floors by means of the ramps.

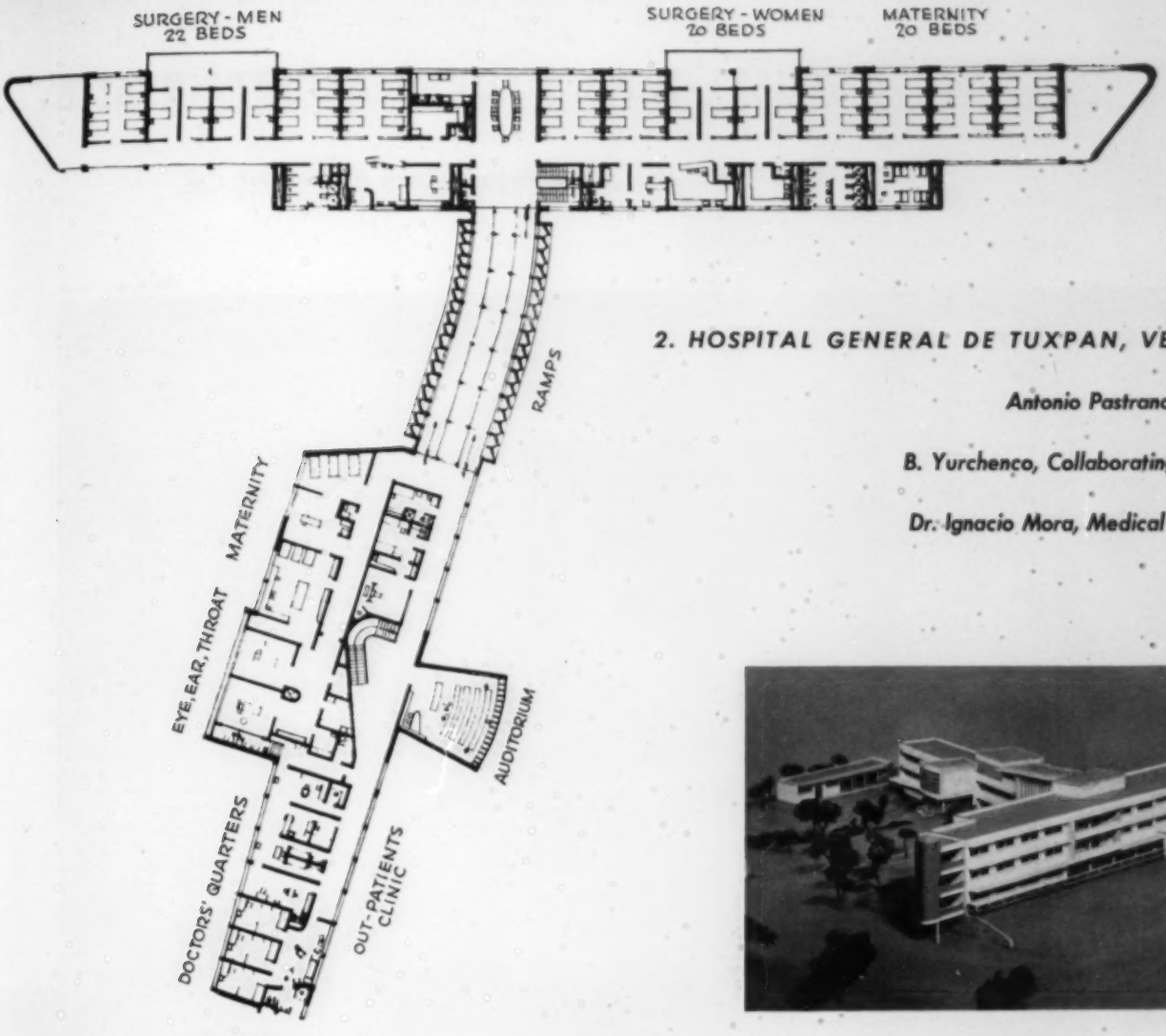


Third Floor. *As might be expected, the plans show few private rooms, more beds in wards than in newer United States hospitals*



First Floor

Mezzanine



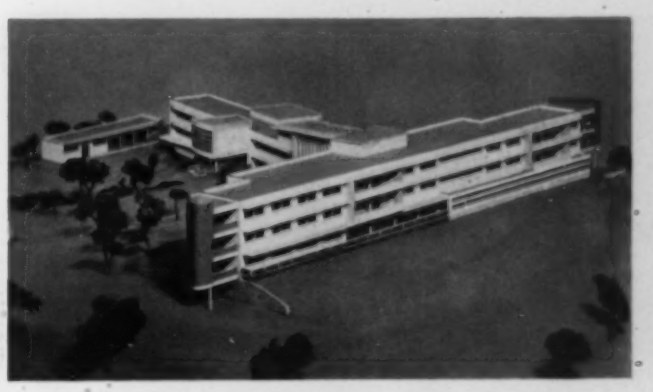
First Floor

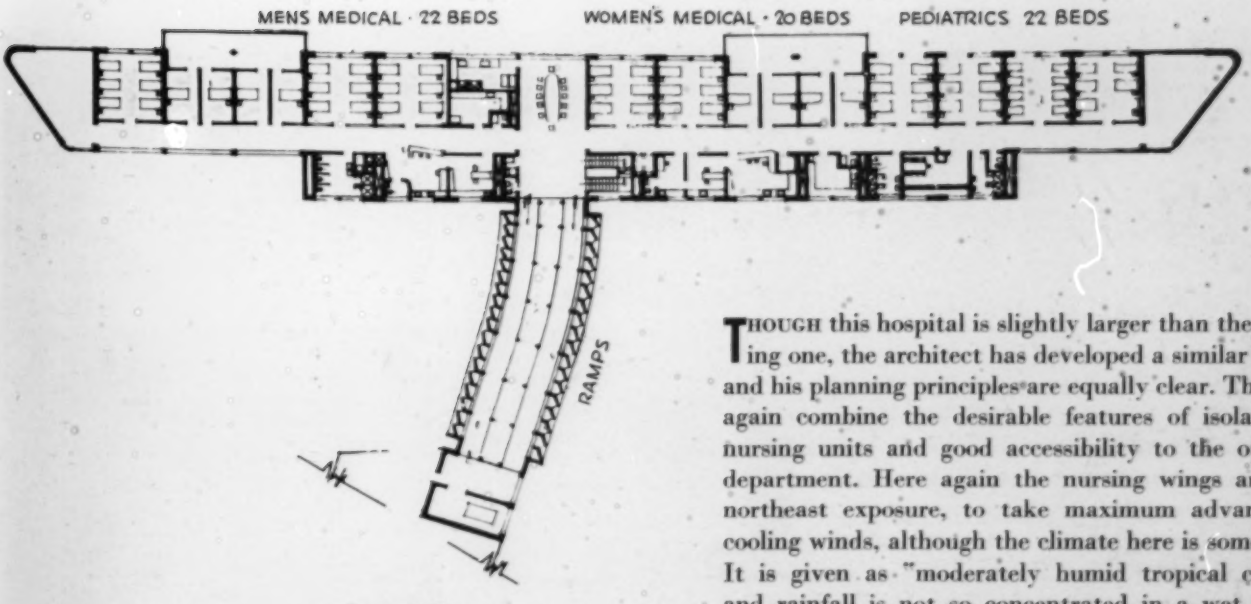
2. HOSPITAL GENERAL DE TUXPAN, VERACRUZ

Antonio Pastrana, Architect

B. Yurchenco, Collaborating Architect

Dr. Ignacio Mora, Medical Consultant





Second Floor

THOUGH this hospital is slightly larger than the preceding one, the architect has developed a similar scheme, and his planning principles are equally clear. The ramps again combine the desirable features of isolation for nursing units and good accessibility to the operating department. Here again the nursing wings are given northeast exposure, to take maximum advantage of cooling winds, although the climate here is some cooler. It is given as "moderately humid tropical climate," and rainfall is not so concentrated in a wet summer season. It will be seen that in Mexico a "general" hospital is more general than in the United States, including wards for infectious diseases and for tuberculosis, and especially extensive out-patient facilities.

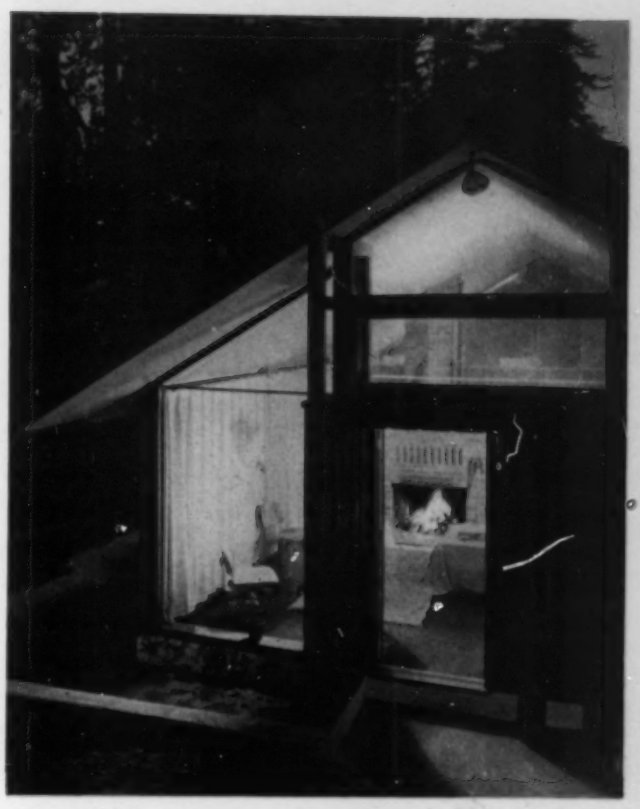
GUEST HOUSE FOR A MOUNTAIN SITE

For Mr. and Mrs. John Lockheed, Lake Arrowhead, Cal.

Julius Shulman Photos

Lucille Bryant Raport (Raport & Hicks), Architect;

Gordon De Swarte, Structural Engineer

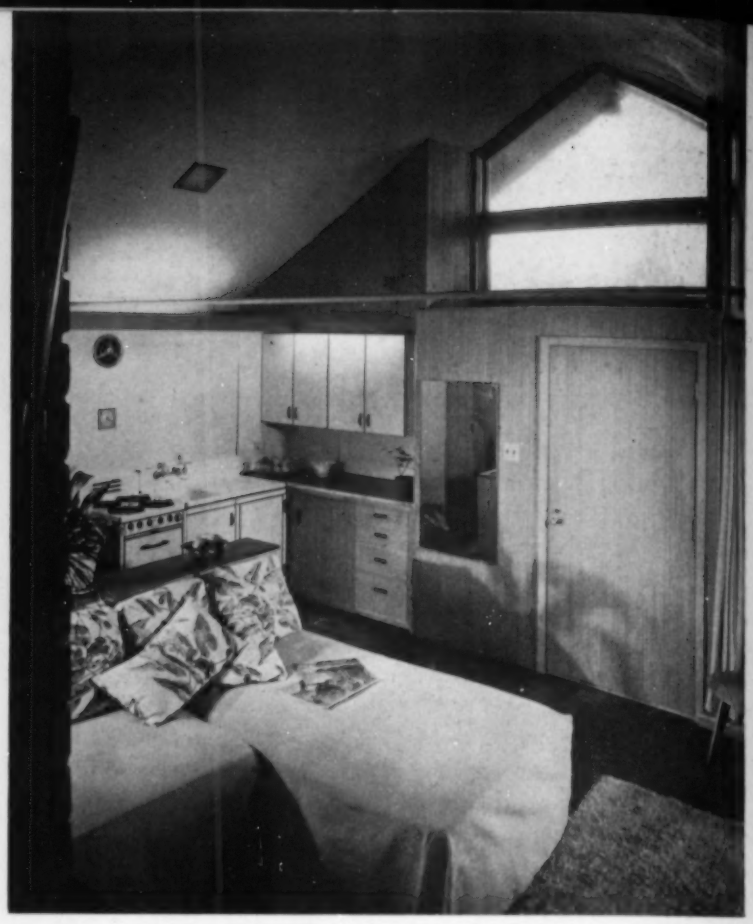


THE owners of this mountain cabin, a contractor and his family, felt that the only kind of architecture which would express their way of living was that which would develop naturally from conditions of use, economy, weather, site, and a magnificent view, regardless of how unusual the house appeared beside its conventional neighbors.

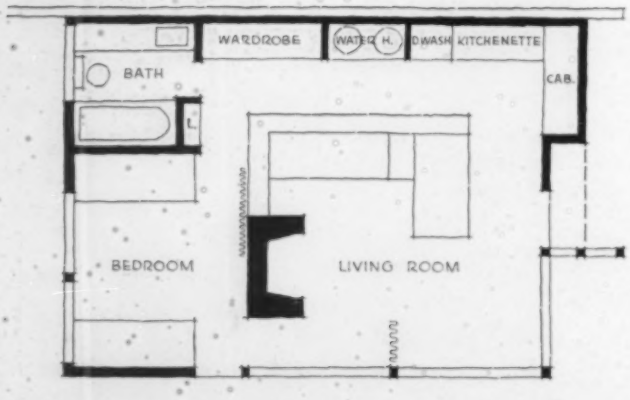
The site, located just next to the dam at Lake Arrowhead, gives an unobstructed view of the lake to the northwest, and pine-covered slopes to the southeast. The large year-'round home, for which designs are now complete, will be placed on the northwest side, along the crest of the lot. A drive will divide the site, with the guest house located downhill from the drive. Only the roof of the guest house will be visible from the drive and from the main house. For this reason all vents have been taken up between roof rafters to the ridge, where

Pitch of the roof (restrictions in the area demanded a pitched roof) was calculated to create visor effect, to permit view of mountain panorama but without any glare from the sky at normal standing height. View opposite page shows tie rods serving also as curtain rods

All vents are brought together and hidden behind louvers in extension of the roof. Cabin is nestled against a low cliff and this side will not be visible from main house



Interior of cabin is treated virtually as one area. A low counter (opposite page) separated kitchen area from rest of interior, and serves as back for day bed cushions. Kitchen is fully equipped, even to dishwasher and washer



they are hidden by louvers running the length of the ridge. The roof is carried out to provide privacy and shelter for the terrace.

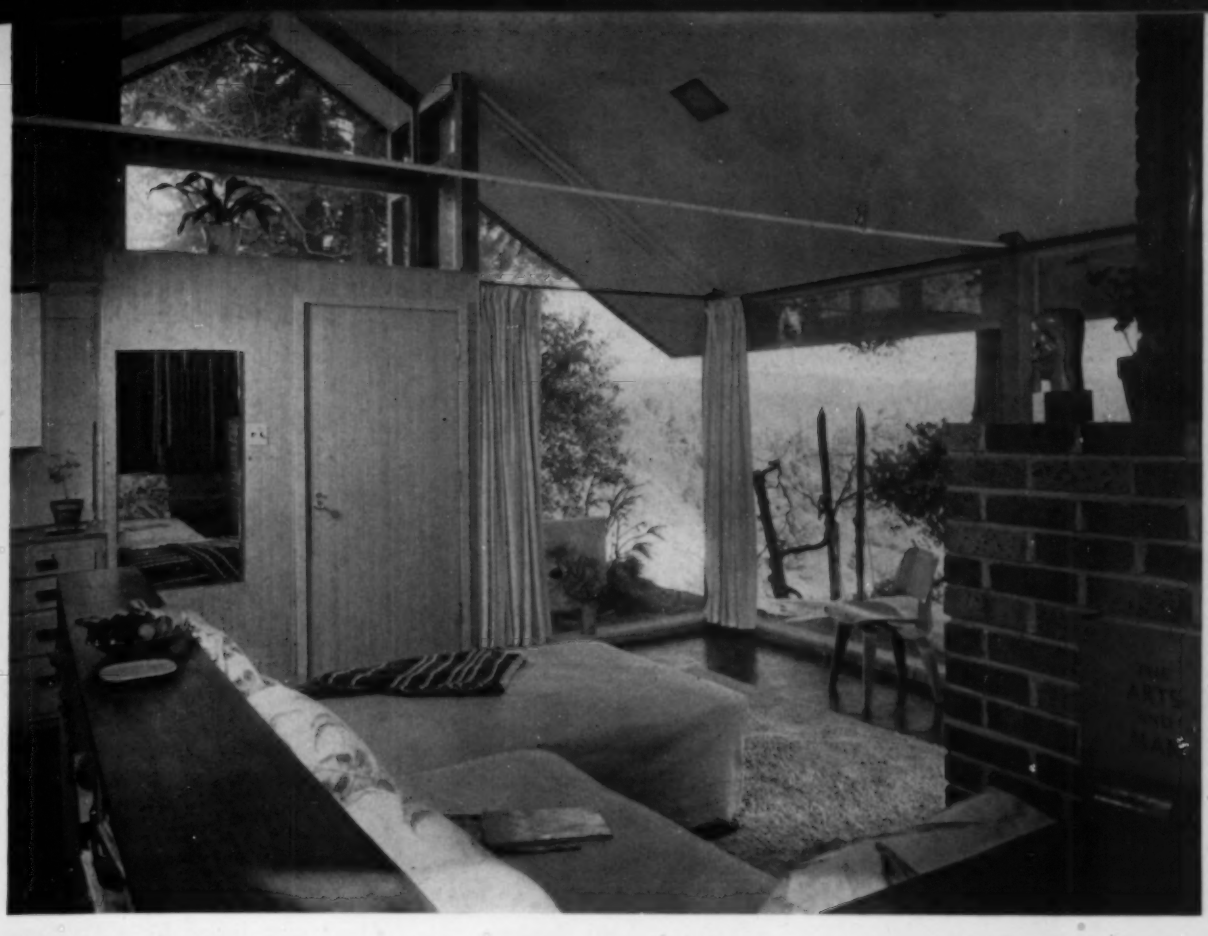
The projected use of the guest house demanded a very flexible plan. It might be used by the owners and their four-year-old daughter, or by a visiting couple, or by as many as eight people during the fishing season.

To create spaciousness in a house of 520 sq. ft., the area was treated as one room with a corner subtracted for bathroom. This was achieved by having a low bookshelf and counter as back for the living room couches, and running all cabinets and storage areas in a strip along the back wall. The ceiling follows the line of sloping roof rafters, and all glass areas extend up and disappear into the ceiling. Plate glass walls extend the interior space out onto the terrace and beyond to the mountains.

To create privacy for eight, curtains may be drawn which separate the room into three separate sleeping areas. The simple appearance of the roof construction was created by using four tie rods which act as the lower chord of a truss. These rods serve in addition as curtain rods.

When a heavy snowfall threatens, portable horizontal shutters may be placed outside the plate glass walls and hooked to the jambs. These are sectional, so that any depth of snowfall or drift can be accommodated.

The property to the southeast is government owned, thereby requiring no artificial provisions for privacy. The Lockheeds feel that their guests should have more than just a place to eat and sleep; that they should have a place in which to see and enjoy the majestic view at all times, whether indoors or out-of-doors.



Fireplace is buff colored brick, with Heatilator. Floor is asphalt tile on concrete slab, with radiant heating coils in the slab. Ceilings are of fiberboard; walls special finish plywood. Windows are of quarter-inch plate glass, with ventilating sash of awning type. Exterior, redwood vertical siding

Ezra Stoller Photos

Harwell Hamilton Harris

Architect

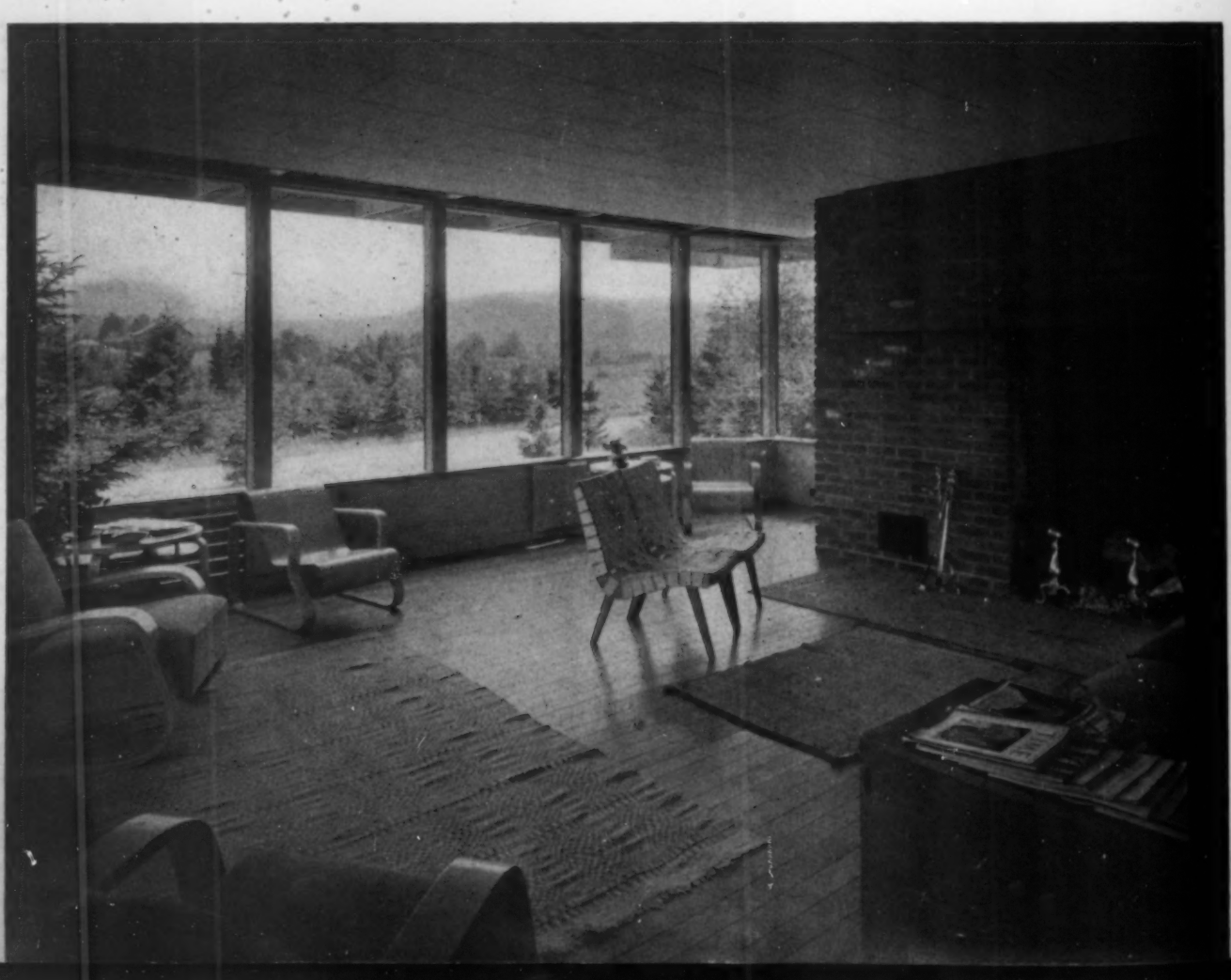
Russell S. Johnson, Associate

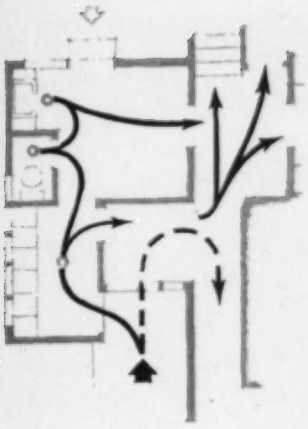
NORTH COUNTRY HOUSE FOR MANY CHILDREN

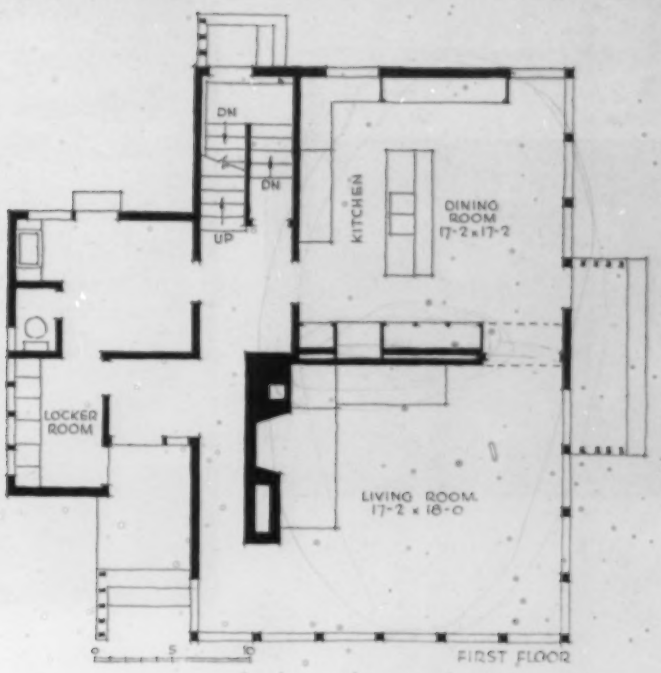
Walter E. Clark House, Lake Placid, New York

Compact, surprisingly spacious inside, specially adapted to children, this cold-country house by a California architect serves the head of the North Country School (ARCHITECTURAL RECORD, Dec., 1942), his family, and some pupils, up to a total population of eleven.

With charming practicality it makes extra provision for mud-shedding entrance ways, for life in the kitchen, for well-guided traffic, collected sanitary facilities.







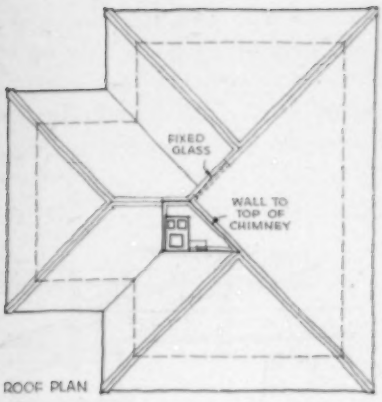
"MUD ROOMS" AND TRAFFIC PATTERN

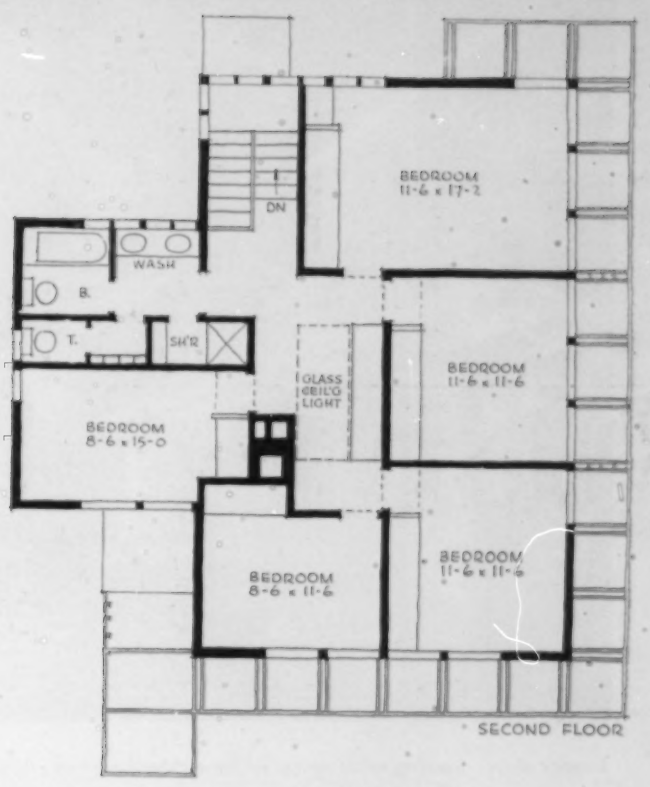
Of incalculable benefit, in country living, is the entry traffic pattern traced in the plan (top left). Children use side door, shed rubbers and overclothes in open lockers, can proceed into house or else to toilet and wash-up at laundry tub. It is easy not to track mud into the house. Guests entering by main glass door have coats taken into locker room, proceed to living room. Others have easy choice among entrances to kitchen, living room, basement, upstairs bedrooms.

LIVING ROOM, *facing south and east on magnificent views, is isolated from through traffic. Fireplace is salmon-red brick, partition wall waxed cedar, floor prefinished "factory" oak; couch cover blue; walls peach-colored. Though fireplace opening is 5 ft. high, only 18 in. deep, fires draw perfectly because of tall smoke box, 18 by 18 flue tile*

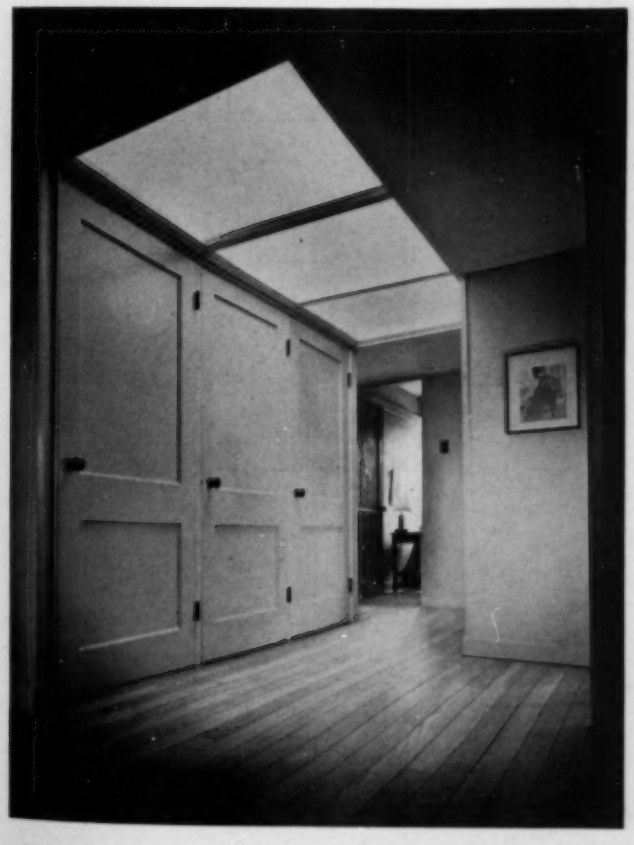
Photo, top left, shows the rear of the house; top right, the kitchen seen from the hall entrance; bottom, the dining room side as seen upon entering from the living room (compare with the view on previous page). Storage of dishes is along outer wall; of food, along the inside partition next to the refrigerator. Kitchen utensils are stored mainly under the sink. This makes for easy food handling, table setting, dish washing. Outside door permits eating on the terrace in favorable weather

"Kitchen living" is especially welcome in a house where the living room is in frequent demand for entertaining callers. This kitchen not only takes care of food preparation and dining but also makes provision for evening reading, study, children's play — the activities of the old-fashioned living room behind the parlor. The floor is salmon linoleum, the home-made cabinet work is of varnished pine and fir plywood.



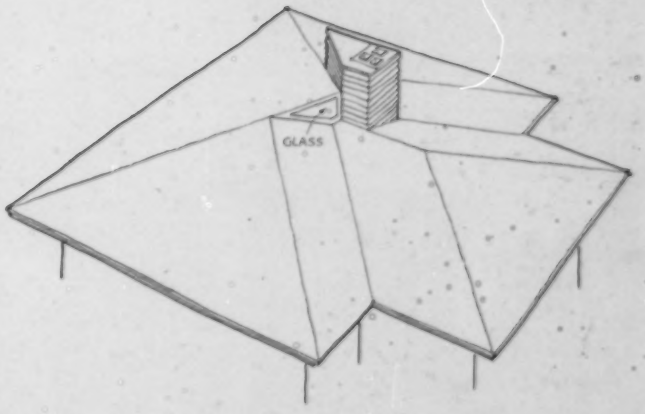


Each of the many bedrooms on the second floor has one full wall devoted to storage, *economically built in*. The dropped ceiling of the hall (view below) carries through above bedroom doors to the front edge of this closet. It forms a dropped soffit of frosted glass. Bulb above it simultaneously lights entry and closet. It lights the room so dimly as to compel turning on adequate desk light for study; can't be hit by pillows.



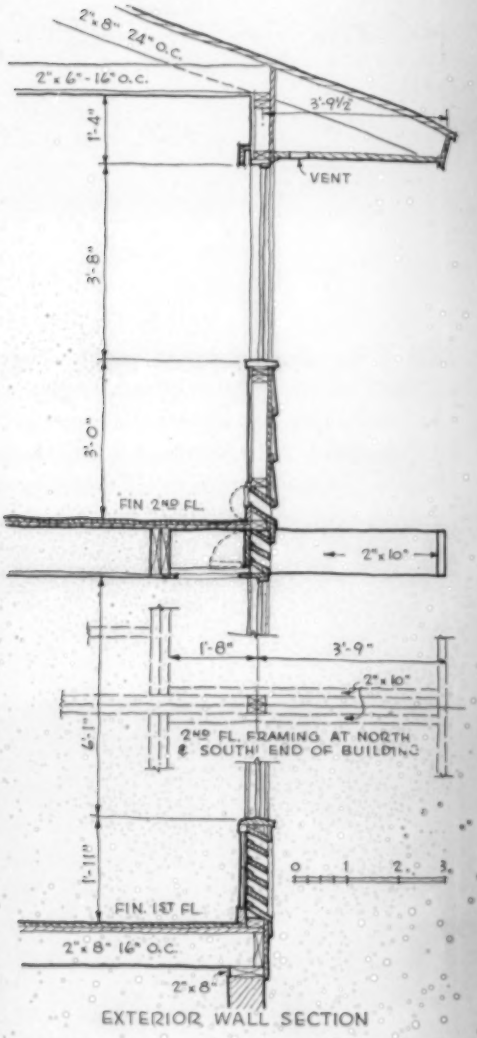
The wooden tower above the roof (see roof plan and perspective) is so placed and designed that every slope above the roof is a down slope. There is no need for any cricks—an important factor in a region of heavy snow. Air from the second floor is exhausted through this tower by means of ducts. These are wallboard-lined for quiet; are carried out of the rooms above the dropped ceiling of the hall, from above the dropped doorway soffits mentioned in the adjoining text.

The ingenious clerestory window (drawing below) gives daylight to the hall top-light seen in the photograph



Left: view from southeast. The trellage is to be completed by vanes experimentally adjusted to shade first-story windows; it serves esthetically to prevent the compact two-story structure from becoming a box

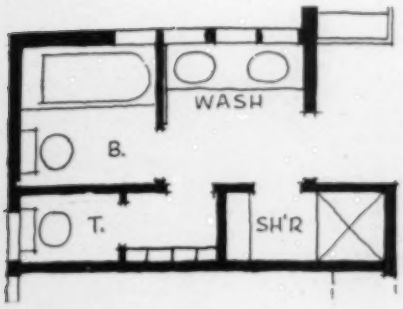
Interior view: dressing table recess in the master bedroom. As in all houses by Harwell Harris, this is closely integrated with the storage space so as not to encroach on the room

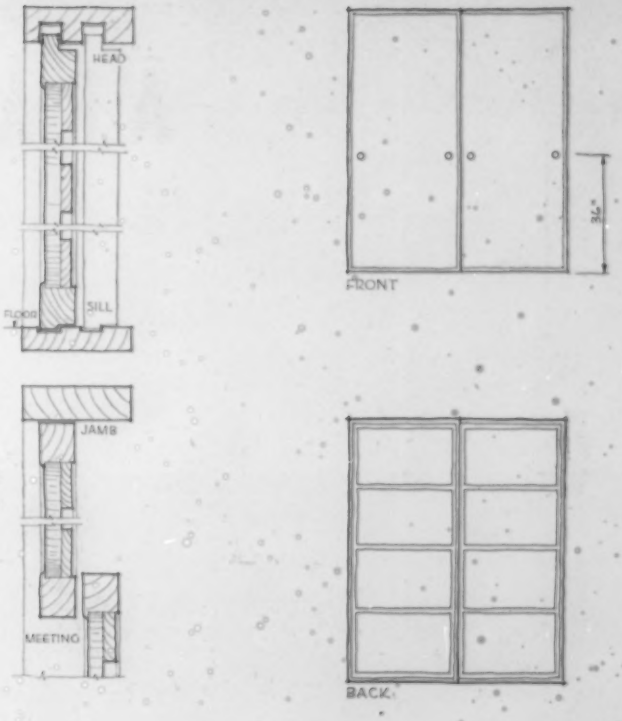


EXTERIOR WALL SECTION

Exterior wall section: this shows the system of ventilation separate from the fixed windows. Intake at first floor is below windows, outlet in thickness of ceiling. Intake upstairs is at floor, outlet through ducts above doors. It was found that in summer, with no temperature differential, cross-ventilation is required to make this system work; in cold Lake Placid winters the high differential makes it work "with a vengeance." One window in each room is casement sash for combined safety and auxiliary venting

This compact sanitary facility was already in successful operation before all the fanfare for this idea; is highly practical. Three toilet seats have proved ample for the whole house of eleven occupants. Tooth-brush and wash-cloth lockers are nicely concealed from the entrance. Entire washroom ceiling is frosted glass, removable by simply lifting up the panes. Light bulbs are in simple reflectors in the attic space above. Mirrors are attached to the partition next to the bathroom and to window mullions





Details of the successful sliding closet door, which requires only two shallow grooves in one of the oak boards of the floor (which accordingly must be laid parallel to the closets). Face of the door is wall-board of one of the tougher varieties; could be of plywood. The light weight is depended on for easy operation

Master bedroom. This is the only bedroom with any north exposure, but on this side the house is shielded by a grove of large trees. Heating of the house is by warm air, and considerable ingenuity was required placing risers in the limited first-floor wall-space

APARTMENTS

Thomas Airviews Photo

Stuyvesant Town and Peter Cooper Village, two developments of the Metropolitan Life Insurance Company for Manhattan's East Side, will provide apartments for 11,250 families

In recent months rental housing production has approached record proportions. In defiance of high costs, labor difficulties, persisting materials shortages, the building industry has confounded its critics by pushing up new totals in apartment construction, and swamping FHA offices with new Title VI applications. It now appears that the new Title VI authorizations of $750,000,000 will be eaten into so rapidly as to pose new financing problems.

Certainly the present situation is more encouraging than at any other time since the RECORD first raised its voice for rental housing.* It might seem time to drop the concern over political and economic aspects of housing and concentrate on design and building. In general that is the spirit of this Building Types Study, which is almost entirely a portfolio of current designs for apartment buildings. It seems inevitable, however, that such a basic necessity as housing must always be affected by the tides of political and economic thought. That is certainly the case today, and there are some considerations that must be touched upon briefly here.

It should be emphasized, first of all, that current high volume of residential construction really began with the lifting of federal controls in the middle of 1947. It would seem that the record of the ill-fated Wyatt program and the following year of persisting controls, plus the progress since controls were dropped, should dispose of the idea that a federal bureau can waggle its finger like a schoolmarm and expect any creative response. Advocates of the disciplinary techniques have not retired, but are now organizing for a further fight.

At the moment housing is being buffeted by another wave of Washington investigation, the topic of which is inflation. In the rather belated concern over inflation, the question is now asked, "Are housing loans inflationary?" This question was raised during hearings on the new Title VI authorizations. Administrator Foley of the HHFA replied:

"I would think that, generally speaking, anything that added unduly to the demand without increasing the supply might be considered inflationary. We must remember, it seems to me, two things in connection with this proposal:

"One is that continued high production of housing, at a rate as high as we can have it, consistent with an orderly completion of the houses started in the face of our materials and labor situation, is extremely important in combatting inflation while we have a shortage of housing and a high demand.

"The other thing we have to remember is that Title VI financing is a means of production finance rather than exclusively a means of consumer finance, and aids materially in keeping up the rate of production. So that I feel that our recommendations are consistent with both objectives, one, increasing the housing supply so badly needed, and not unduly, at least, adding to the inflationary trends."

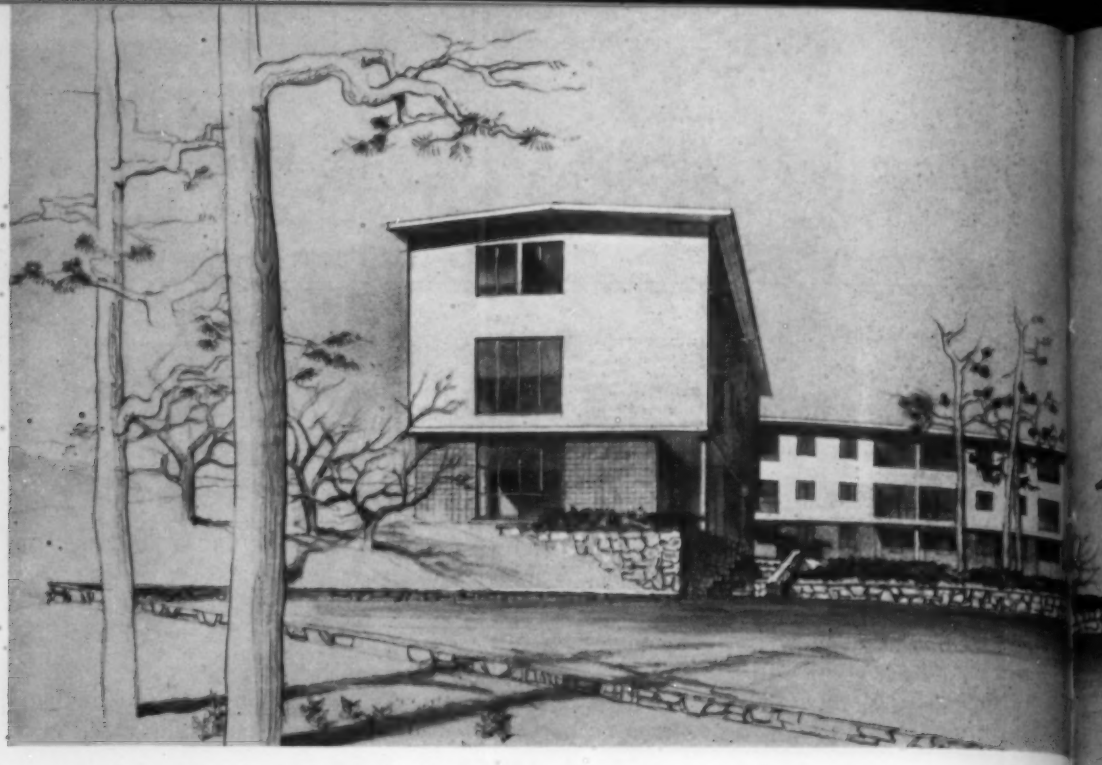
The discussion of inflationary aspects (see also p. 7) is important because new authorizations will last but a few months, and financing will be before Congress again almost immediately. In the hearings a suggestion was made that the percentage of loans be gradually reduced from 90 to 80 per cent, whereupon FHA Commissioner Richards disclosed that average commitments now are running only 84 per cent.

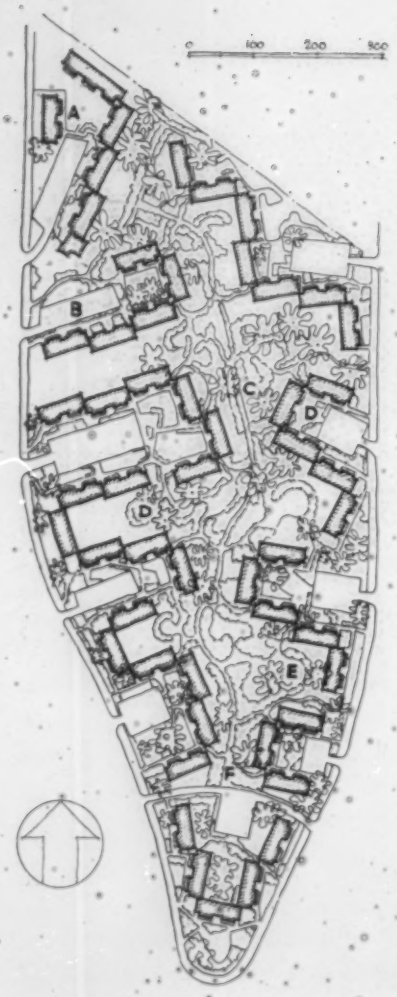
Meanwhile FHA is finding its own ways to favor the lower-cost projects, and to favor rental projects against others, by "selective processing" of applications. While these objectives of "selective processing" are obviously commendable, there might be some question whether in the end it might not have a tendency to standardize apartments at a minimal level. Architects have long complained about similar controls by FHA on design, as forcing a standardization on unimaginative styles of garden apartments.

Fortunately, however, all apartment projects need not submit to Washington to get financing, and all buildings are not the stereotyped garden variety. This Building Types Study emphasizes less common types, where architectural ingenuity finds a good outlet.

* ARCHITECTURAL RECORD: *May, 1946, "The Case for Rental Housing," pp. 67–76; Feb., 1947, "Rental Housing" by Emerson Goble, pp. 76–80.*

"The Rental Housing Mystery" by Miles L. Colean, Housing Consultant, pp. 81–85; March, 1947, "The Building Cost Fixation," pp. 83–89.





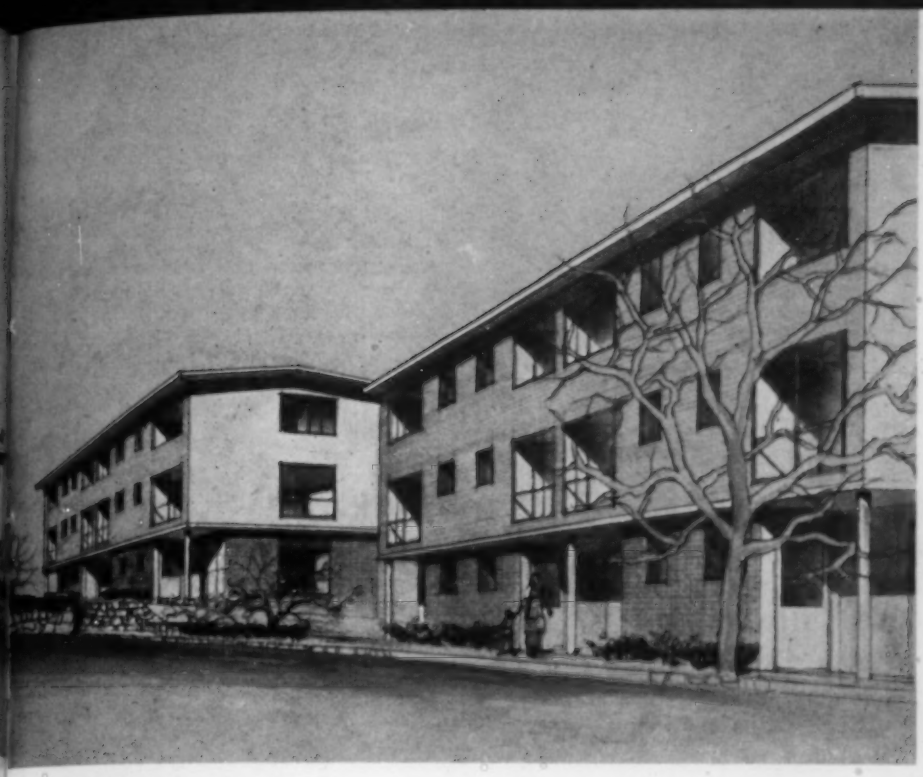
A. 6-unit apartment building
B. Parking areas
C. Interior park, wooded
D. Sitting areas for adults
E. Children's play areas
F. Walks

DESIGNED WITH A BUILT-IN PARK

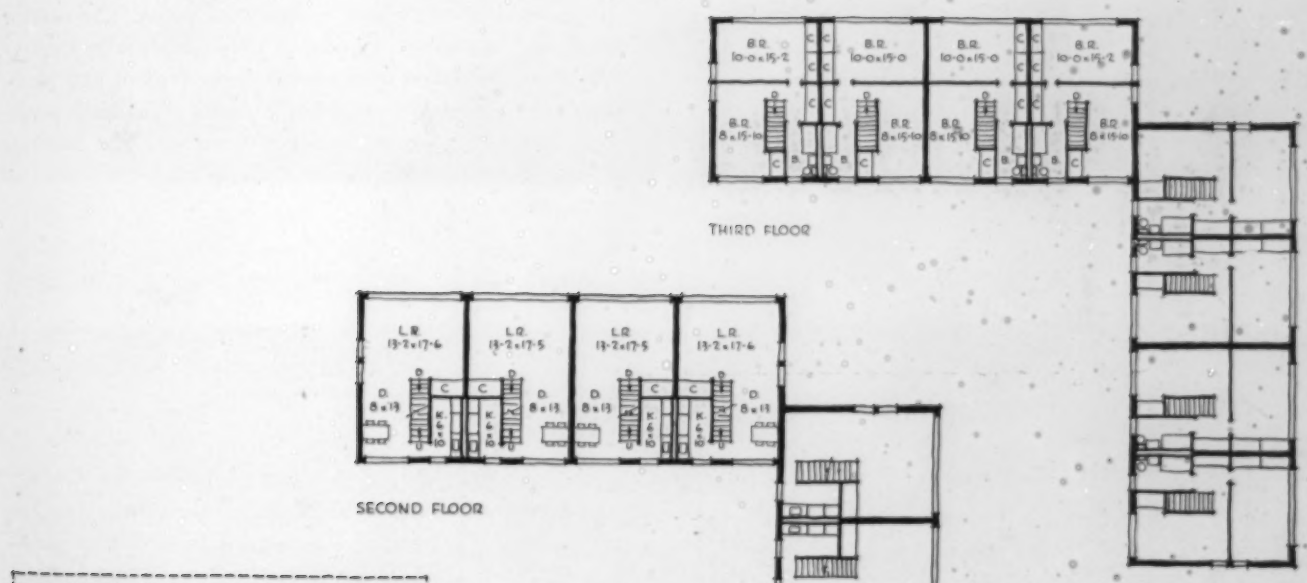
ATLANTIC GARDENS, WASHINGTON, D. C.

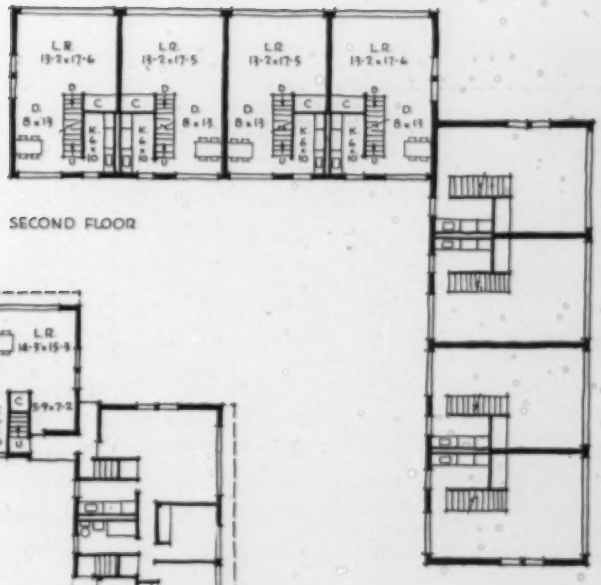
Charles M. Goodman, Architect ***L. B. Voight, Landscape Architect***

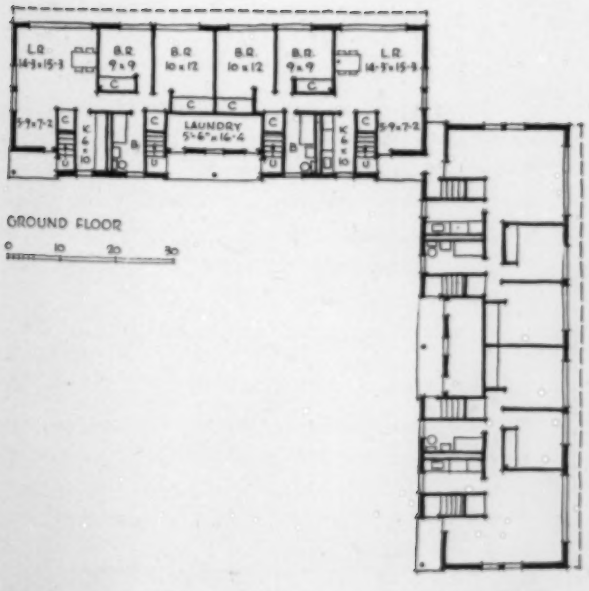
THE 318-unit apartment project known as Atlantic Gardens, now under construction on a hilly, wooded, 13-acre tract at 4th and Chesapeake Streets in the southeast section of Washington, puts into practice the often talked about but less frequently attained ideals of garden apartment planning. The buildings are informally arranged with their principal living areas facing into an interior park, laid out to afford safe and convenient outdoor play space for children, with restful walks and quiet sitting areas for adults. Each three-story building unit contains two flats on the ground floor and four two-bedroom duplex apartments on the upper floors, all with separate entrances. A ground-floor laundry serves all six families in each building. Red clay tile walls for the ground story contrast with gray brick veneer above. Uncommon features include copper tube radiant heat installed in ceilings and prefabricated aluminum closets with sliding doors, adopted to save space and construction time. Thirty-six units are scheduled for July completion and two years is the estimated time for finishing the entire project.



Simplicity and restraint, with good use of materials, characterize the exterior design and will bring a fresh "new look" to an area long accustomed to less imaginative apartment architecture







Julius Shulman Photos

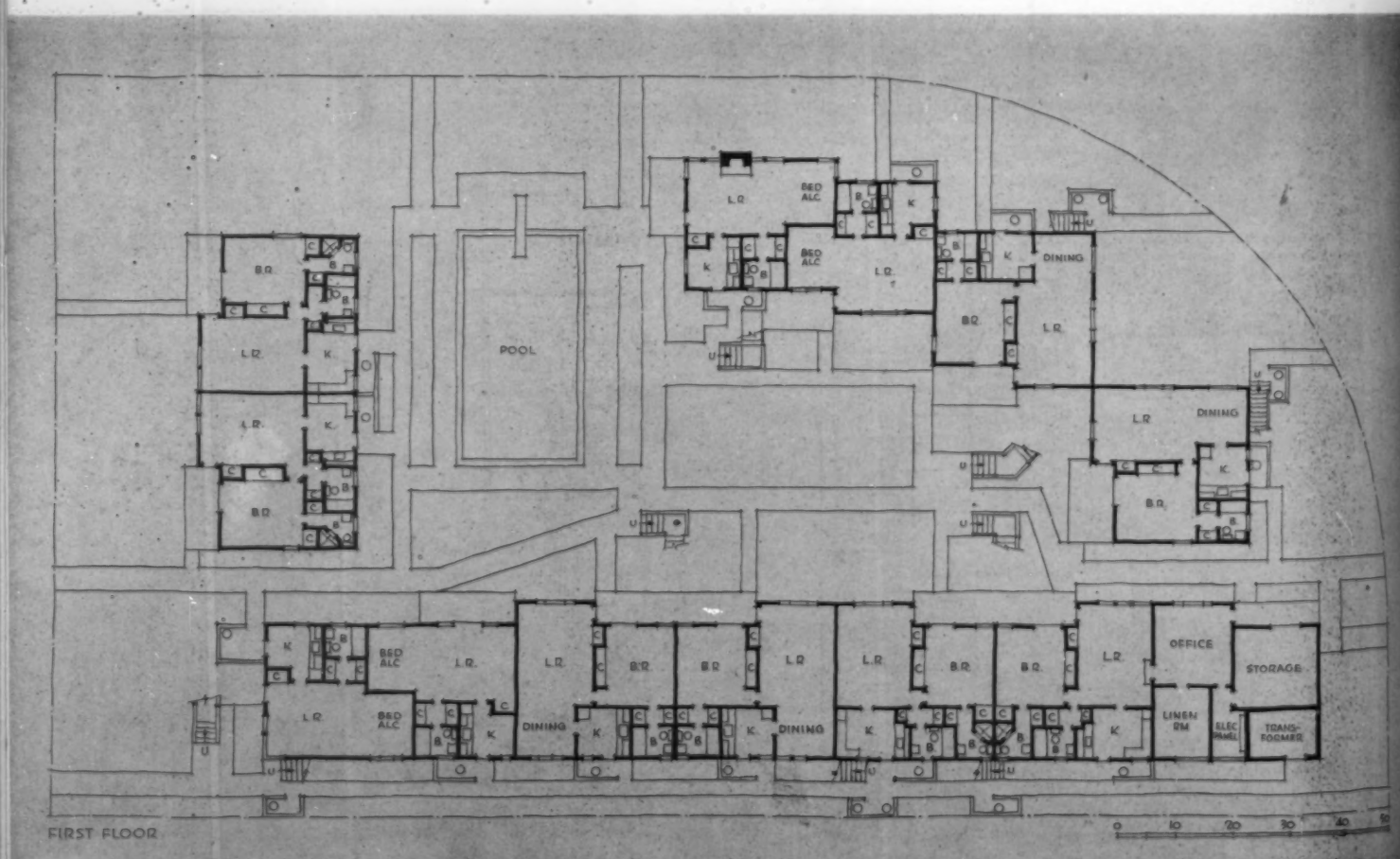
Clark and Frey,

Architects

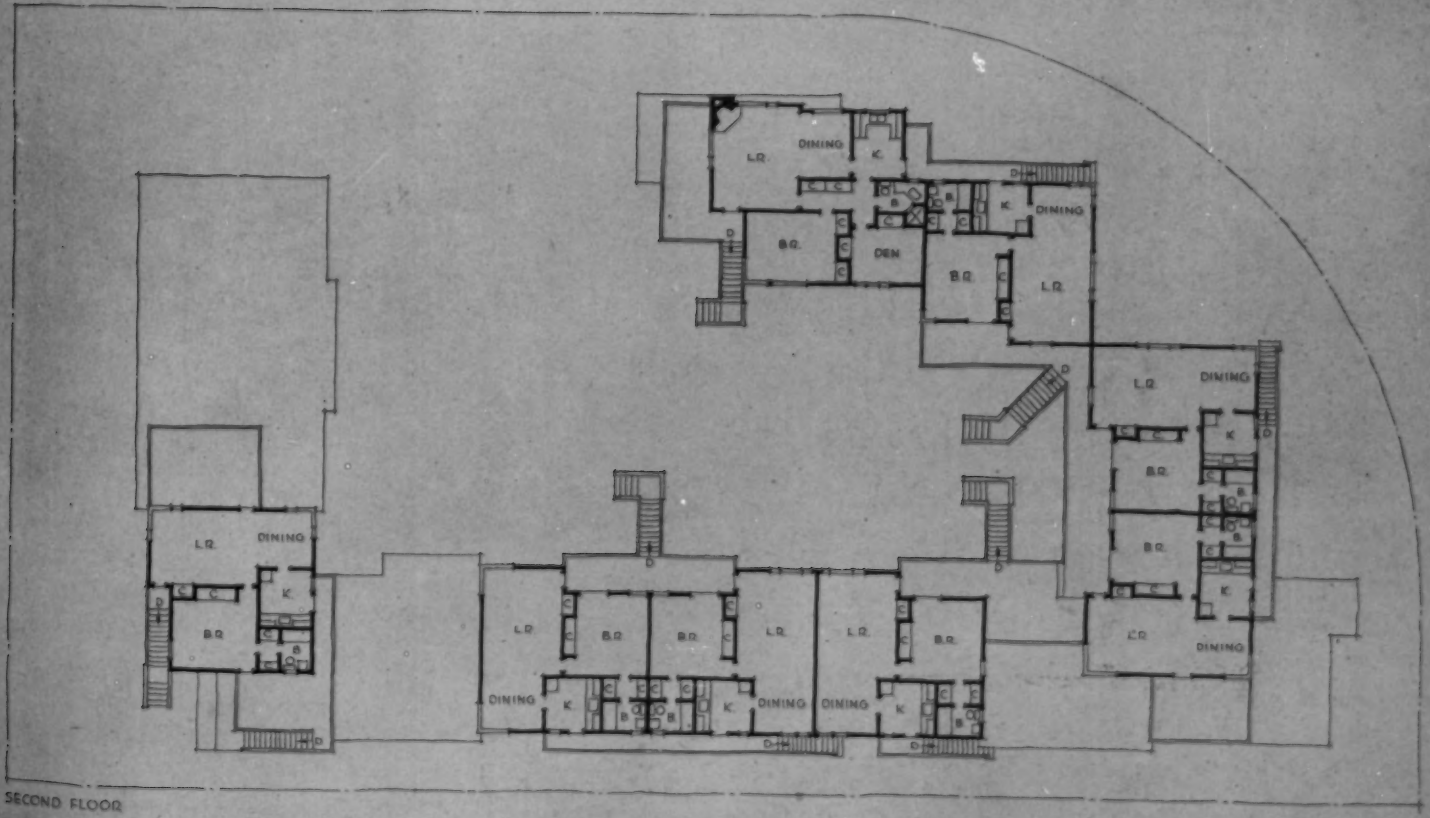
APARTMENTS FOR RECREATION

VILLA HERMOSA, PALM SPRINGS, CALIFORNIA

THE business of catering to the needs and desires of motor tourists and vacationers seeking escape from the city for short or long periods has grown so tremendously since the twenties that more and more architect-designed establishments for this purpose are appearing along American highways, particularly in the more richly endowed recreational areas. The example shown is perhaps typical of the comparative luxury now being provided in the form of convenient and well-planned apartments grouped around swimming pools and other popular recreational facilities. The frankly romantic setting is skillfully attained.



FIRST FLOOR

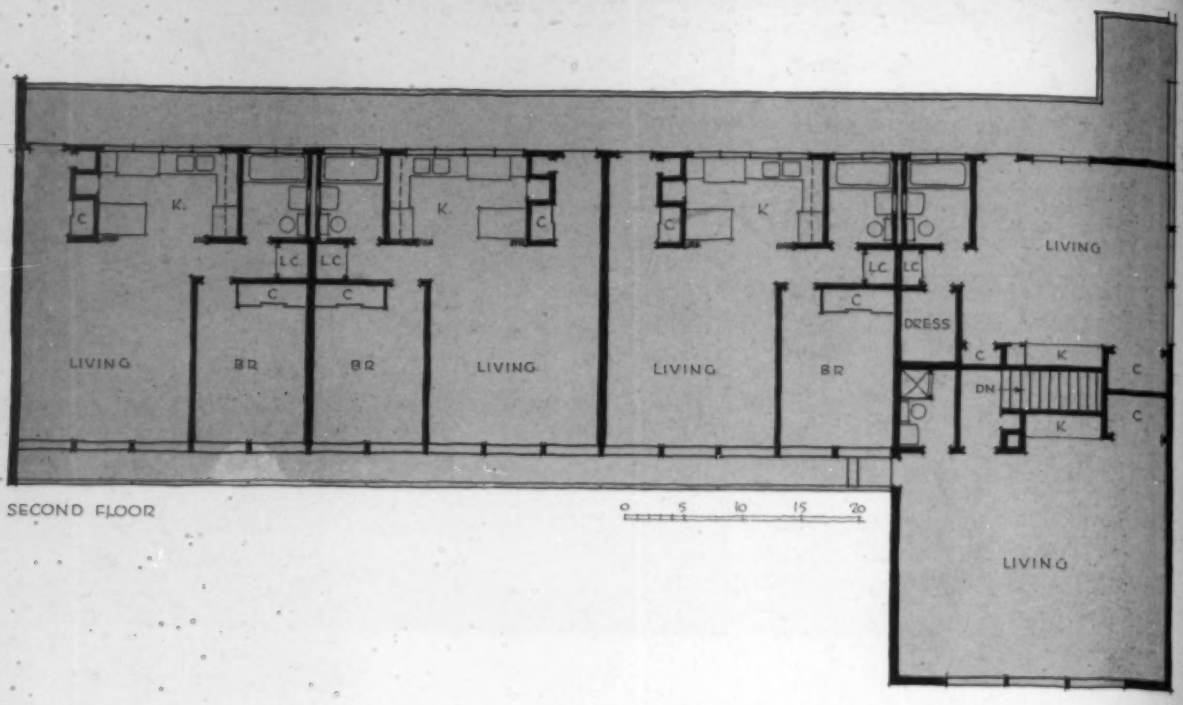


SECOND FLOOR

The pool, which is the center of attraction at Villa Hermosa, is readily accessible from every apartment and observable from almost all of the living quarters — perhaps a subtle concession to the old American hankering to know what's going on outside

Wood frame construction with steel sash; cement floors on ground level, wood on second level, all carpeted except kitchens and baths, which have linoleum; composition roofs with aluminum surface; circulating electric heaters; stucco exterior walls

Interiors, as shown below, are definitely on the luxury side and take advantage of modern arrangements for enjoying either complete privacy or outer views of the scenic beauty of the surroundings. Simple, restful furniture of good design and well-considered color scheme contribute to relaxed comfort



SECOND FLOOR

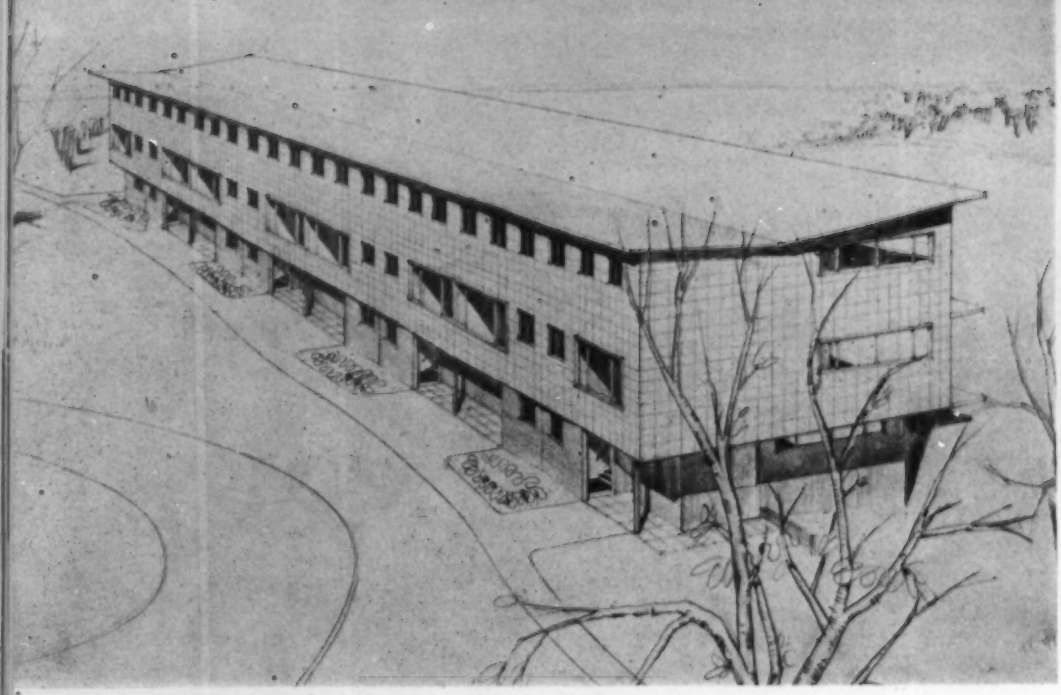
NEW APARTMENTS OVER A DRAFTING ROOM

The Office of Pietro Belluschi, Architects

IN days of housing shortages, apartment additions are often made to existing buildings of other types (where zoning regulations permit) to provide extra living quarters and bring in revenue for the owner. Seldom, however, are such alterations done with the degree of quiet distinction reached in this group of five small apartments built over Mr. Belluschi's offices on the edge of the business center of Portland, Oregon. The original building, at one time a garage, is improved by the added height and the contrasting materials used for the second story. The long row of bedroom and living room windows facing the street is protected by the projecting parapet faced with cedar siding. Access to four of the apartments is from a cantilevered walkway reached from the higher grade level at the back of the building on its western end. The office studio apartment is entered from stairs leading up from the floor below. The drafting room floor level is below grade for most of its length.

View from within the reception office, across the sheltered entrance porch, and along the street side of the building

This long face of the building parallels the street, from which it sits back about twenty feet. Full advantage has been taken of this front area for appropriate planting. A portion of the basement at the far end is used by another business tenant whose name appears over the entrance

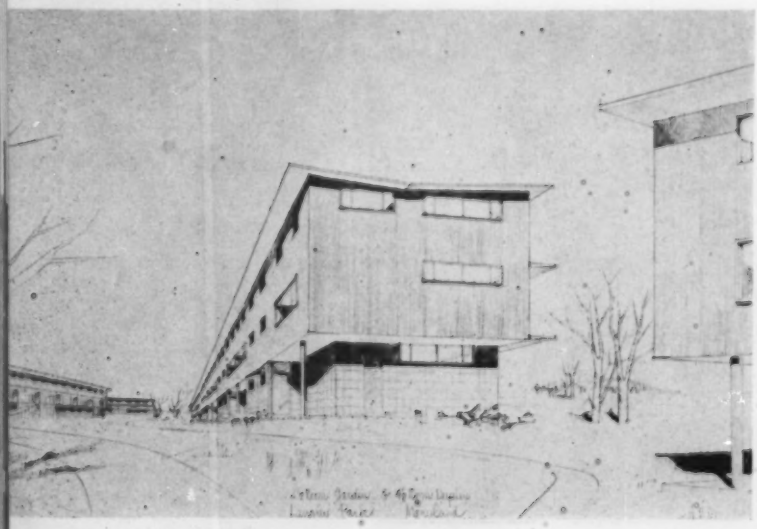


Charles M. Goodman

Architect

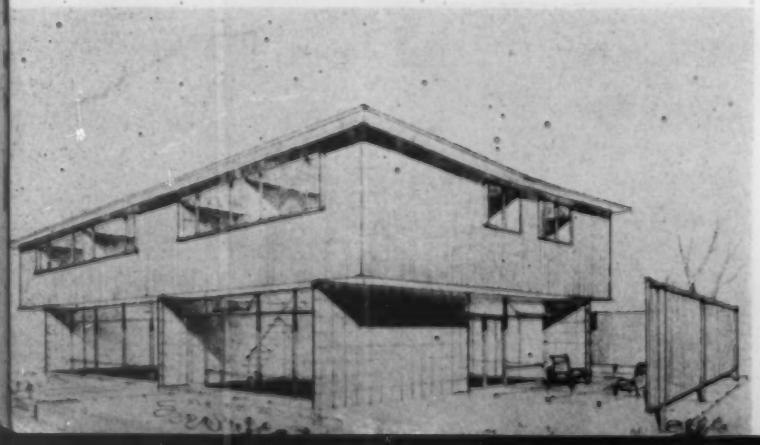
GARDEN APARTMENTS FOR RENTAL HOUSING

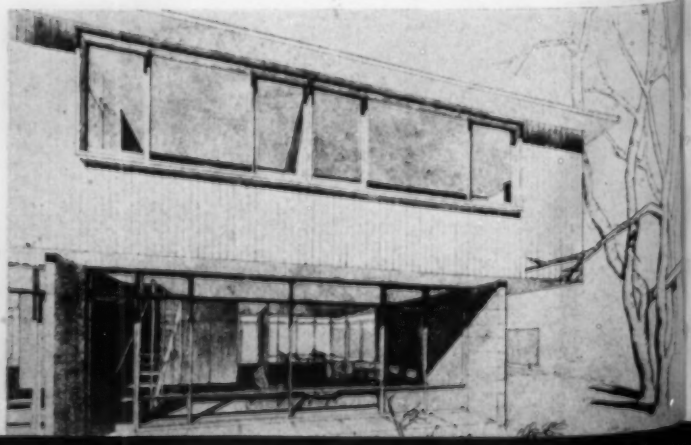
LANGLEY PARK PROJECT, MONTGOMERY COUNTY, MD.

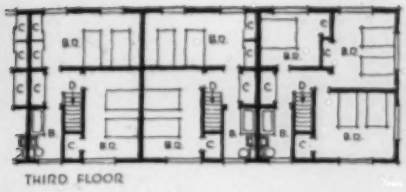


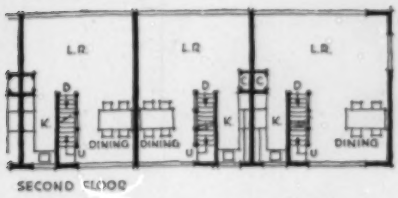
SIMILAR in many respects to the other garden apartment scheme by Architect Goodman in this issue, the Langley Park proposal is much larger, comprising a complete community designed to include 2008 units, distributed on a Maryland tract measuring roughly a mile long by about four-tenths of a mile wide. Unfortunately, in view of the present housing situation, the project is indefinitely postponed due to zoning difficulties. Four types of buildings, made up of different combinations of flats and duplexes, are arranged on the plan to take best advantage of the site. Shopping Center, Community Center, schools, etc., are essential parts of the scheme. Exterior treatment, as suggested by the accompanying sketches, is to be simple, depending on intelligent use of materials and color for its effect.

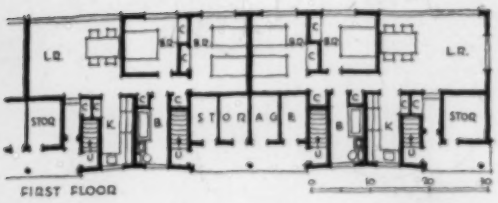
Sketches below show the semi-detached, 6½-room duplexes that are to be grouped at several parts of the site



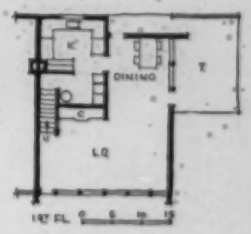


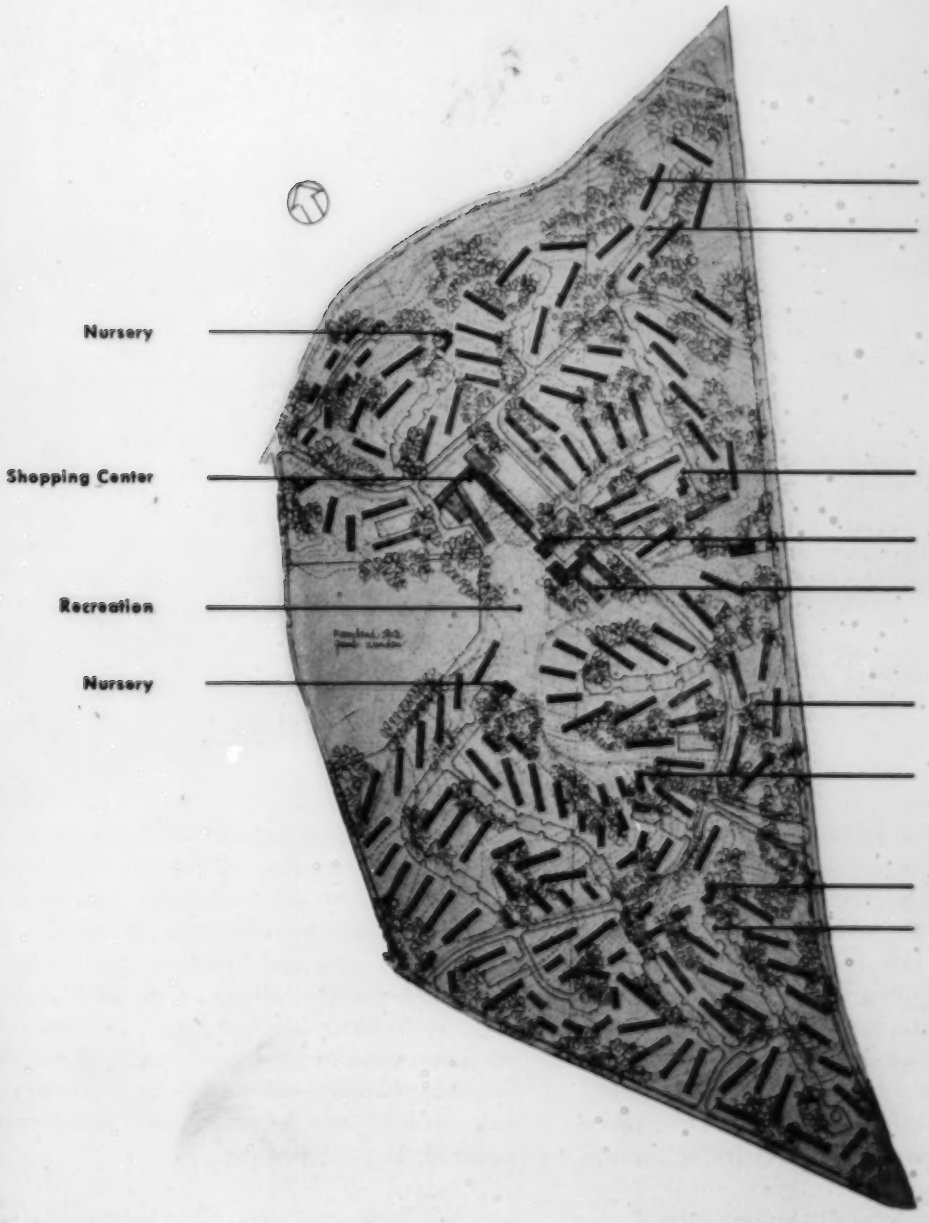


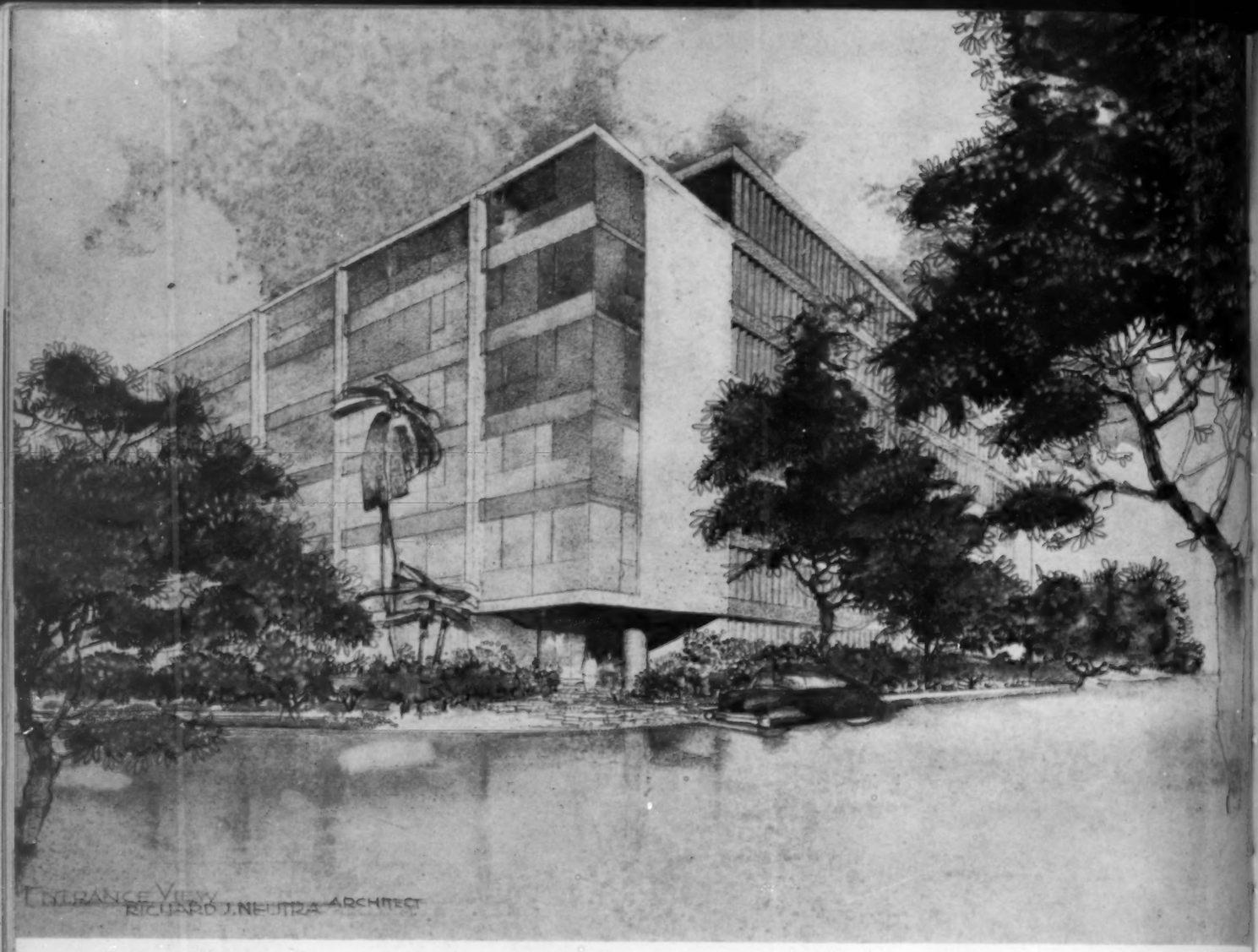




Most of the buildings are to be made up of combinations of the flat and duplex units shown at the left. A number of semi-detached, two-story duplexes will give variety (see plans at right). 936 4½-room units, 696 5½-room, 306 3½-room, and 70 6½-room are proposed as the proper distribution for the probable tenancy of the entire project





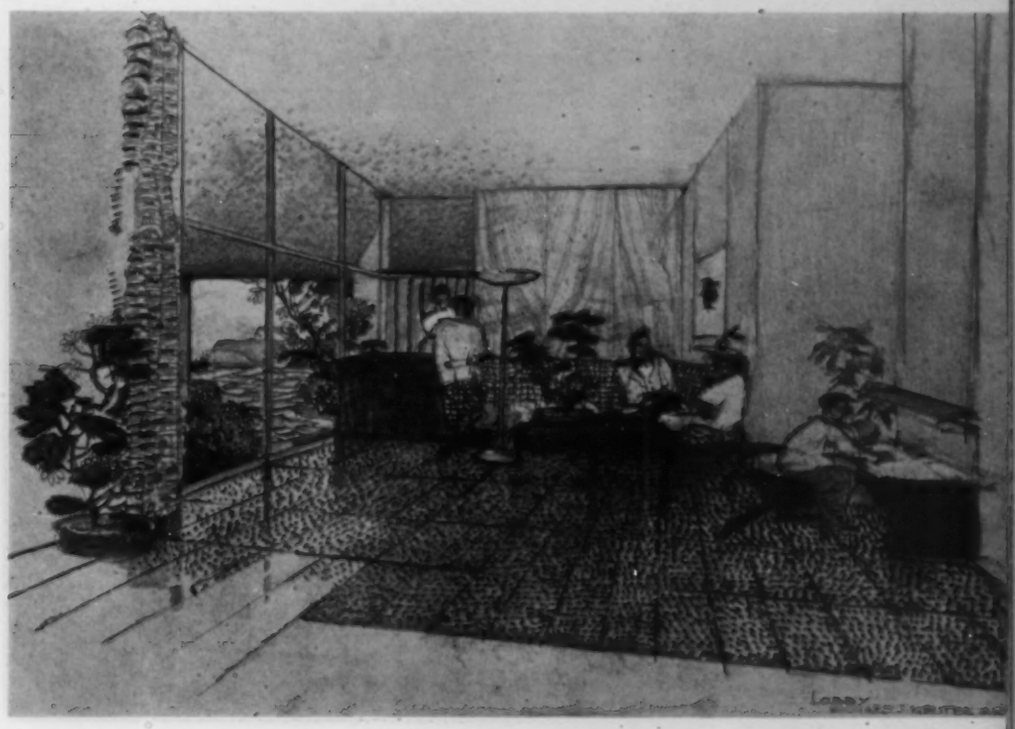


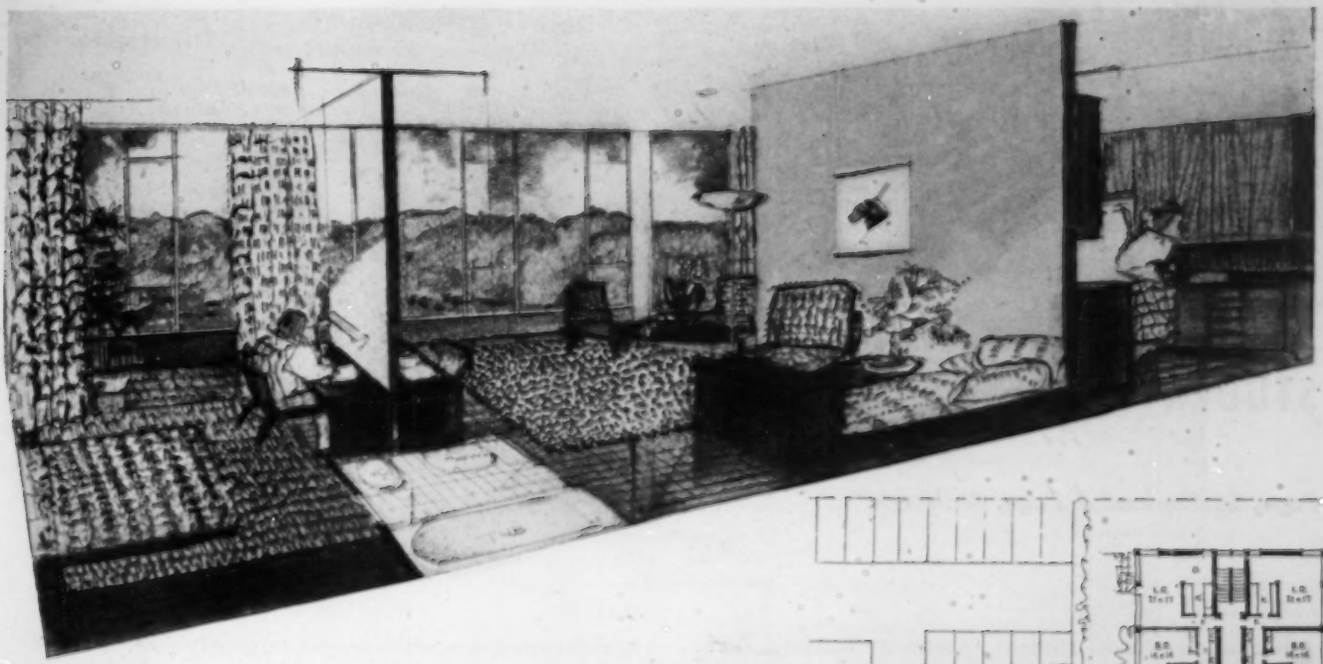
COOPERATIVE APARTMENTS NEAR THE SIERRAS

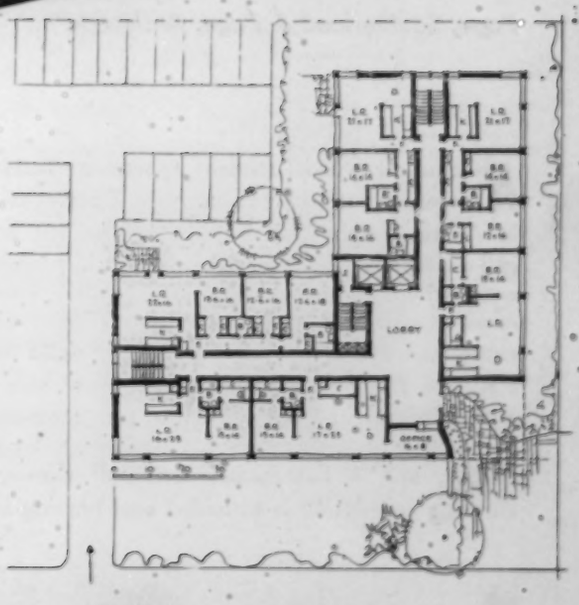
Richard J. Neutra, Architect

THIS project is designed for a site rather centrally located in a residential community at the foothills of the Sierra Madre mountains of Southern California. To take advantage of the available view of Mount Wilson, Mount Lowe, and other notable eminences of the vicinity, Mr. Neutra has projected a seven-story, reinforced concrete building with outer walls largely of glass, within which he has arranged some four dozen apartments of from 3 to 5½ rooms for moderately prosperous families. The plan arrangements are varied and flexible to fit the needs of a diversity of tenants. Cooperative ownership and management should make the project attractive to families who wish to buy rather than rent yet who prefer apartment living to assuming the responsibilities of house ownership. Inside bathrooms and kitchens, presumably properly vented, permit the full use of the outer walls for glass areas in the living and bed rooms. Conveniences include the usual modern elevators, dumbwaiters, incinerator, basement laundry and storage facilities, servidors from halls to kitchens. A parking area is provided in the angle of the L-shaped plan.

Inside the ground floor corner entrance, a lobby contains a desk for the management, with an office adjacent, and provides for the comfortable transaction of business. It is not intended to be a general lounge

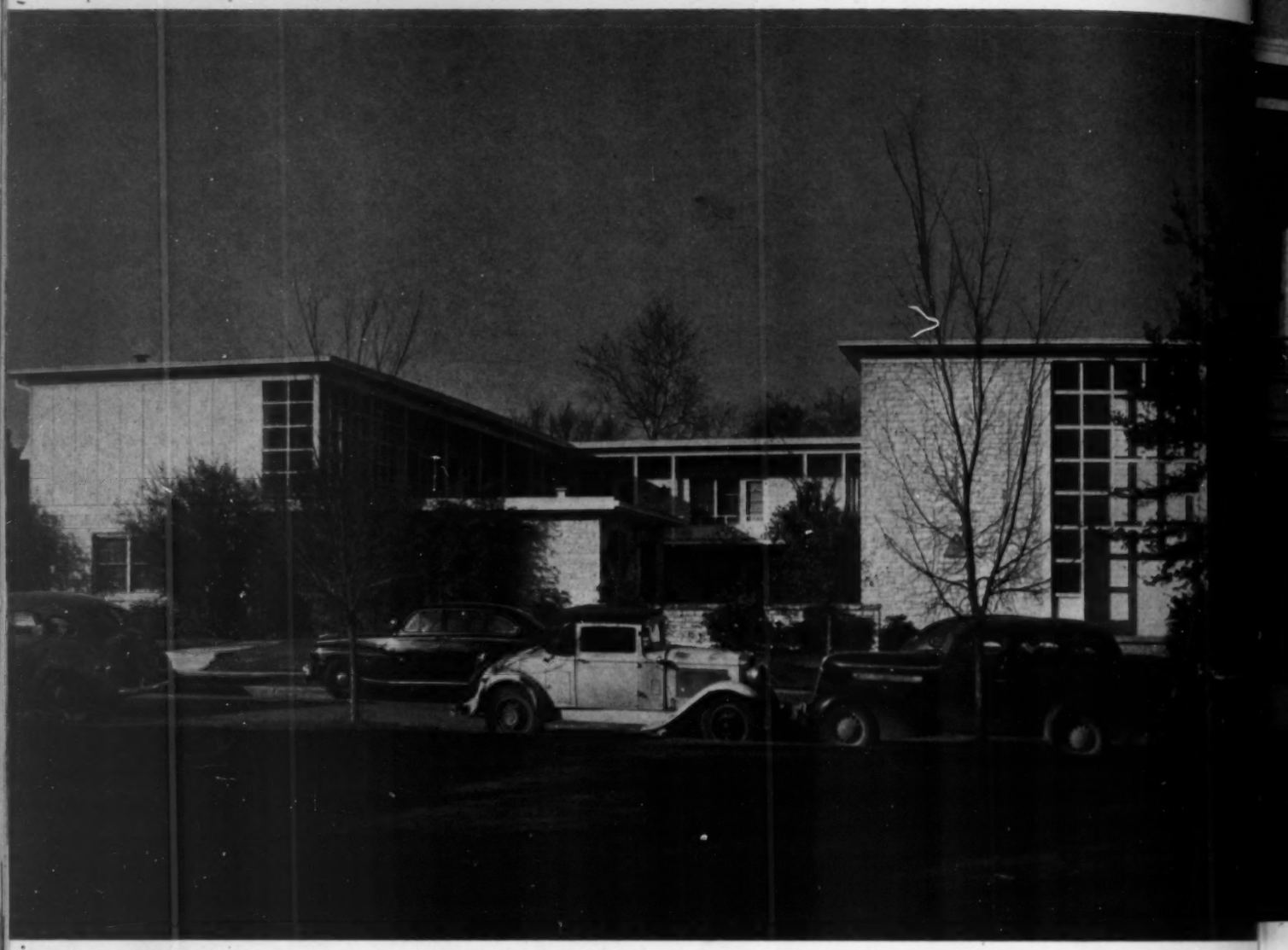






A typical small apartment is sketched here in perspective, indicating the possibilities for flexibility in furnishing and use of space. The large windows will give added spaciousness to already amply sized rooms

Ellison Photos

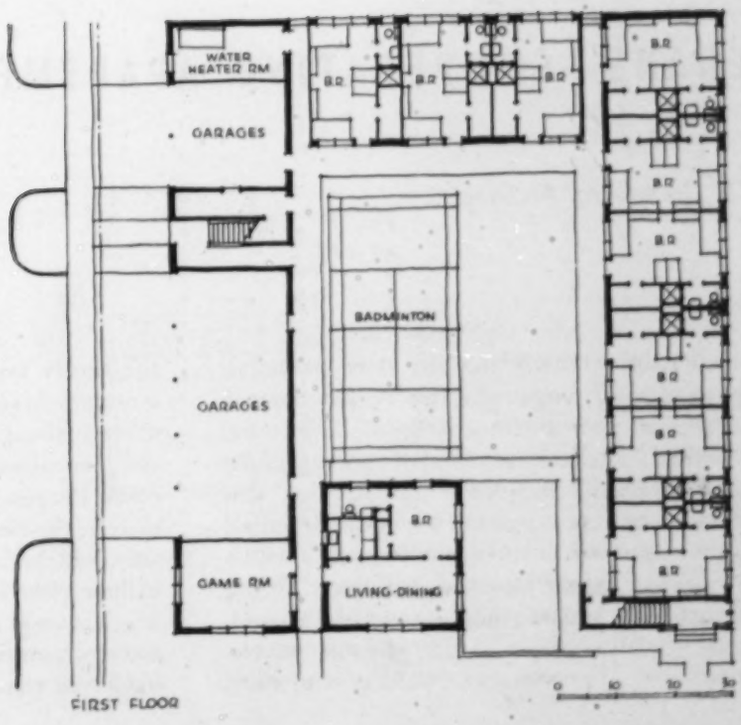


STUDENT APARTMENTS IN TEXAS

Page, Southerland & Page, Architects

An unusual type of student apartment building, built by private individuals near the University of Texas in Austin, might well be adapted for the housing of college students in other sections of the country where crowded conditions are likely to prevail for some time to come at our institutions of learning. This example was completed just before the war. It is of wood frame construction faced with handworked native stone veneer. Each apartment accommodates two students and is fitted with beds, study desks, bookcases, large clothes closets, and a bathroom with stall shower. Ample through ventilation is provided and heating is by natural gas space heaters. Garages, originally built as shown on the plan, were later converted into additional apartments. Interior walls in the rooms are finished with vertical V-joint pine boards and all woodwork is also pine. Bathroom walls are plaster, with tile wainscot and tile-lined shower stalls. The control office and an apartment for the owner or manager is included in the one-story wing at the entrance to the court. This type of accommodation is popular with the students, who find it superior to the usual dormitory and boarding house sort of thing. Competent architectural design makes such a project an attractive addition to a college vicinity.

The compactness and simplicity of the standardized individual apartment unit makes for economy of construction. The fact that all the apartments are essentially alike should also be a factor in making the management problems simpler

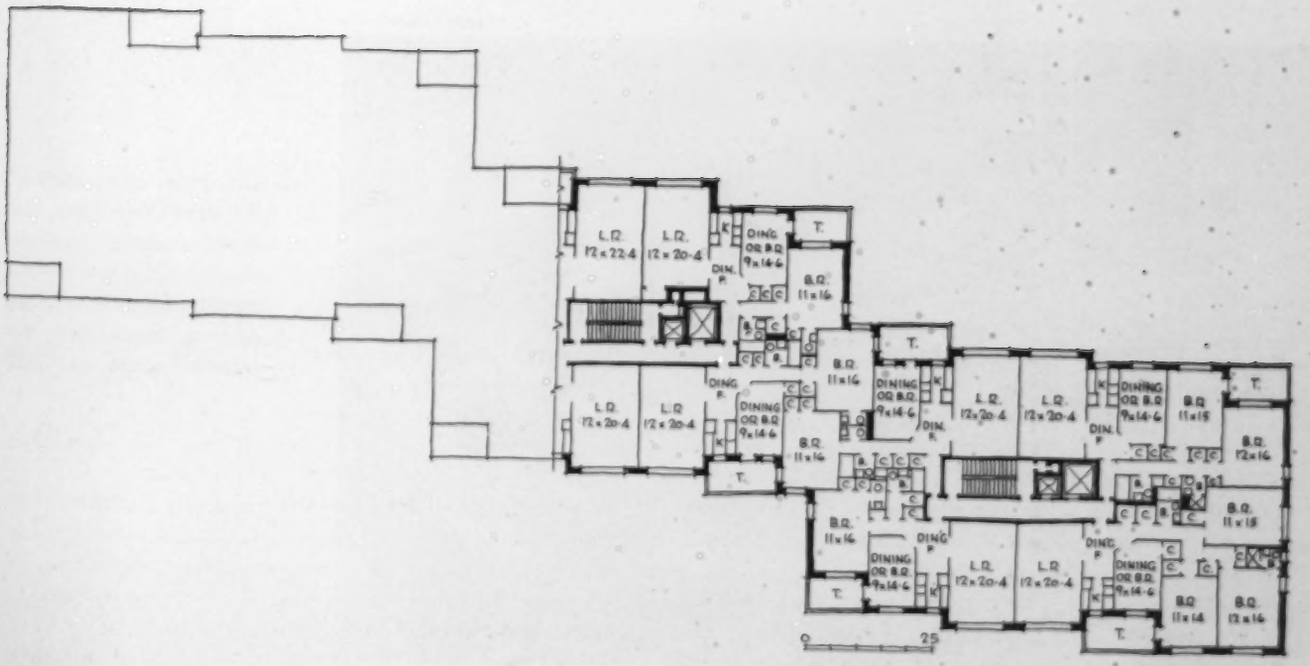


FIRST FLOOR

VETERANS' COOPERATIVE APARTMENTS IN NEW YORK

Charles E. Greenberg, Architect

To provide for the veteran who wants more than minimum housing and is financially able to undertake to buy it, a 600-unit cooperative apartment project has been launched in New York with the full approval of the Veterans Administration. Known as "Great Oaks," it is to be built on an eight-acre wooded site in the Riverdale section of the city. Four 12-story buildings, each with a two-story, 150-car garage attached, will leave 70 per cent of the plot for walks, planting, and playground. Each typical floor will contain 10 4½-room apartments, one 3½-room, one 5½-room, and one 6½-room, all of the luxury type, for veterans of "better than average income." Monthly carrying charges are estimated to average about $25 per room per month, including interest, amortization, taxes, maintenance and operating costs. Because the buildings are for veterans, the promoters, the Basic Builders Corporation, anticipate that they will be able to secure materials and equipment without delays and at reasonable prices, the benefits of which savings they promise to pass along to the cooperative corporation. The buildings are designed to be of reinforced concrete construction, with red brick facing-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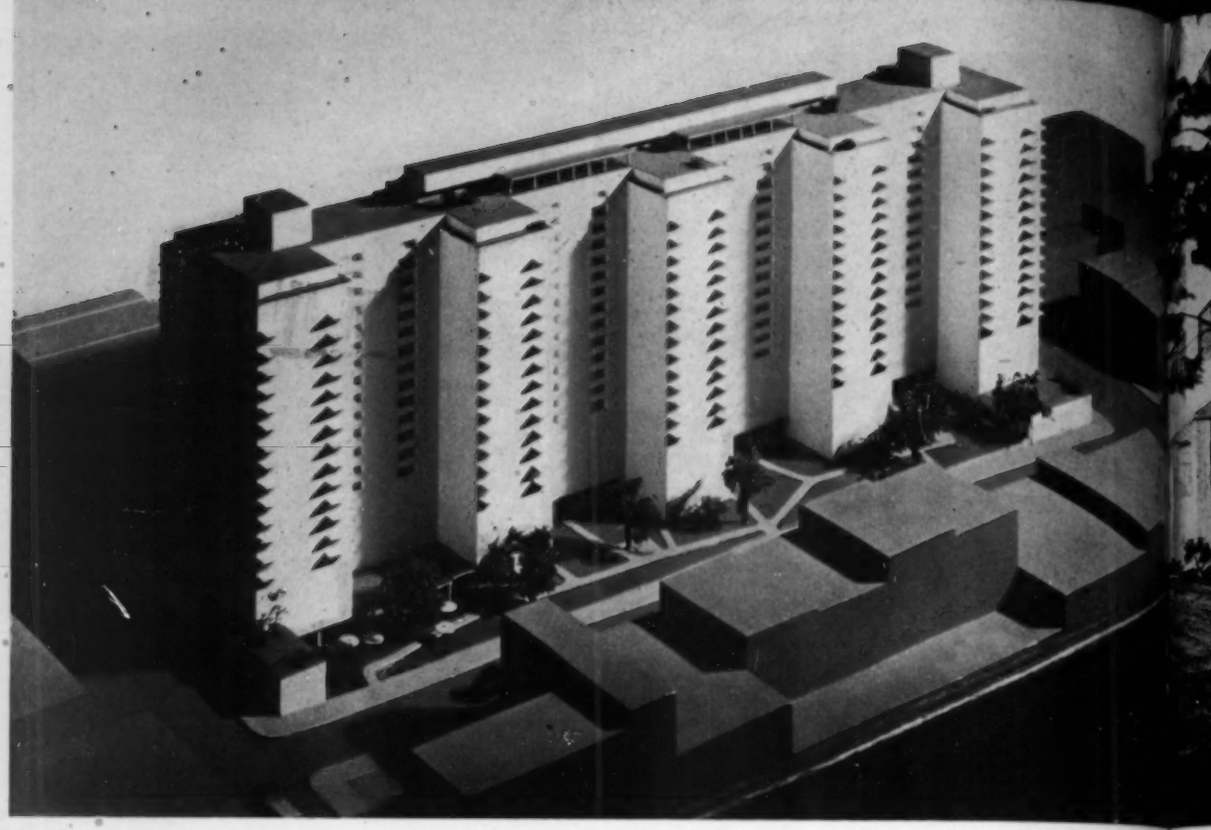
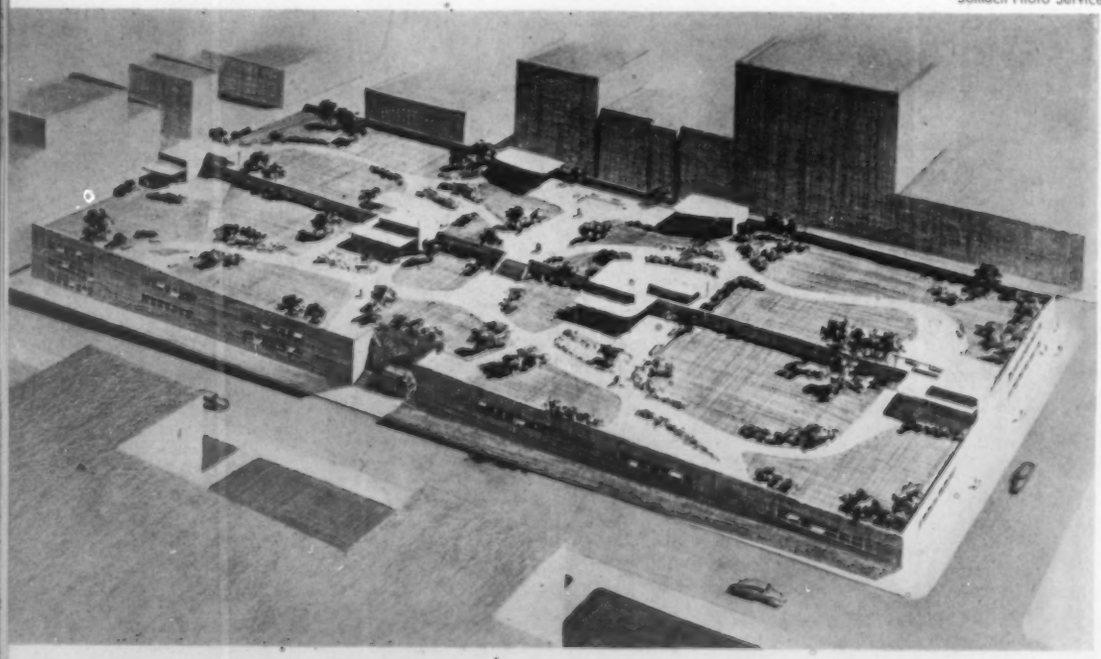


A NINETEEN STORY CITY APARTMENT

Mayer & Whittlesey and Skidmore, Owings & Merrill, Associated Architects

Somach Photo Service



The entire block south of the New York Life's proposed apartment building would be converted into a partly subterranean garage with a landscaped recreational garden on its roof

Rendering by George Cooper Randolph

THE use of land in New York residential areas has stuck pretty rigidly to traditional formulas and has seldom been approached with as fresh an eye as was applied by the architects of the New York Life Insurance Company's latest apartment house project. Boldly turning their backs on the usual practice of building along the street lines with open courts in the interior, they have planned for a long, narrow, 19-story building running through the entire middle of a city block, from east to west, and leaving substantially wide landscaped areas along the streets to the north and south. The sketch model across the page tells the story. Maximum light and air and distance from surrounding structures were the stated objectives. Accompanying the building, and occupying another entire block adjacent to it on the south, would be a 1400-car garage with two stories above grade, surmounted by a park.

Preliminary sketches indicate the probable character of the architectural design that will eventually be built, on the site between Sixty-fifth and Sixty-sixth Streets and Third and Second Avenues

IMPROVED HOUSING FOR WASHINGTON, D. C.

DEVELOPMENT FOR J. B. TIFFEY AND SON

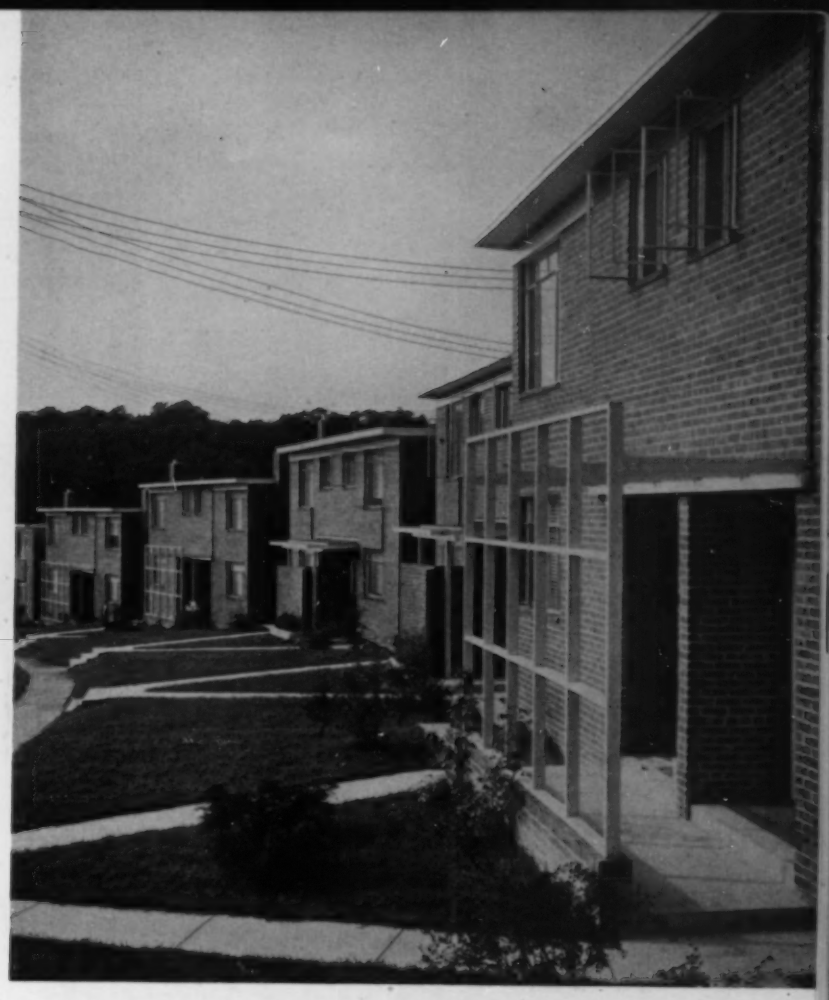
Berla & Abel, Architects

The simple, economical, clean-cut exteriors of the new projects make obsolescent the unsightly, cluttered, stair-dominated older type of project shown below

IMAGINATION, ingenuity, and experience made possible a group of most economical housing units that take full advantage of the interesting terrain and the sloping site. A study of the plans on page 134 will show how an inside stair gives access to all floors yet insures privacy for each flat, and no longer are there unsightly exterior stairs like those shown at the left. Apartments are judiciously planned for modern living and tenants have easy access to outdoor terrace and garden areas. Roofs are thoroughly insulated above the plaster ceiling and a continuous screen vent provides ventilation above the insulation.

It is interesting to compare these photographs of the actual project with the preliminary drawings shown in ARCHITECTURAL RECORD for May, 1946.

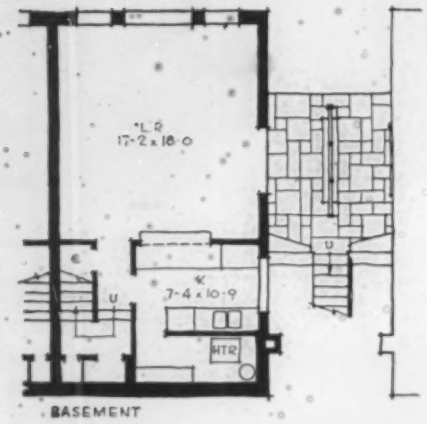
Richard Garrison Photos

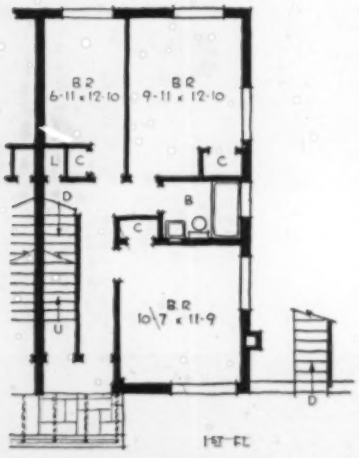


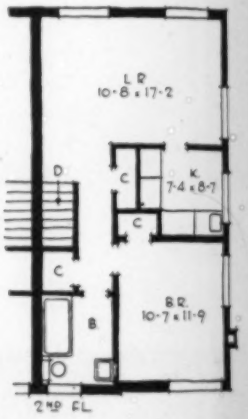
Entrances on the two-story side of the units are given varied character by the use of trellis and curved brick walls. The large windows and Venetian blinds provide floods of easily controlled light

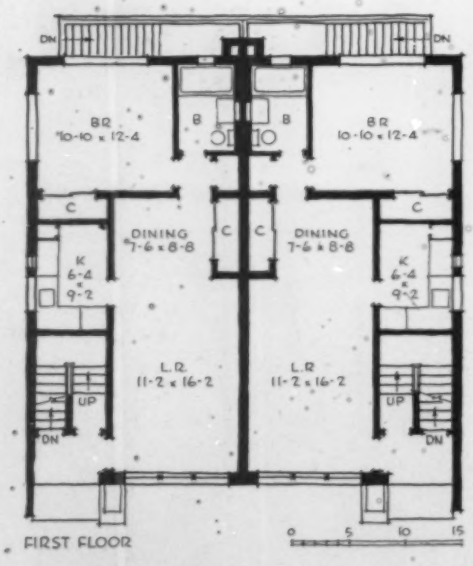
The slope and curve of the access street add to the attractiveness of the approach to the entrances to the apartments

The three-story side of the group opens on terraced lawns with provisions for drying clothes. Below, plan showing duplex apartment with its large living room and kitchen, three bedrooms and bath. Also, the compact top-floor apartment









Plan and rear view of a variation in type showing single-bedroom apartments with combined living and dining rooms

ARCHITECTURAL ENGINEERING

TECHNICAL NEWS AND RESEARCH

THE WALL OF THIN SELF-FRAMED METAL PANELS

By Robert L. Davison, Director of Research, and Howard T. Fisher, Architect

Sponsored by the Department of Commerce, the research reported herewith was intended to furnish architects and manufacturers with the basic design for a fireproof lightweight wall system which would (1) be applicable to conventional steel or concrete building frames; (2) would satisfy requirements of fire resistance, weather resistance, insulation, lack of condensation; (3) would be mainly shop-fabricated, could be easily erected by average contractors at the site; (4) would have a lower first cost and lower maintenance than conventional wall.*

As a further development from Mr. Davison's previous work with William Lescaze sponsored by the New York Housing Trust, the present panels dispense with auxiliary studs, employ one joint throughout the entire panel system.

*Industrial Research & Development Division in the Office of Technical Services

PROBABLY the major obstacle to the free development of the wall is the recession which took place as the consequence of unbalanced progress one hundred years ago. The cast-iron and glass exterior screens of the crystal palaces were conceptually a hundred years ahead of their time. They were structurally light in weight, prefabricated, quick to erect, durable; yet architects, depending on precedent, had not hit on devices to filter out an excess of sunlight, to retain warmth, or avoid destruction by disastrous fires. When heavy masonry casings came back as fire protection, the treatment of this masonry was doubly honorific in the inherited sense. Codes still require not only masonry encasement of steel, where the need of protection is real, but heavy masonry spandrels, where the element of fire protection must be considered as wholly imaginary when one recalls that the fire resistance of the adjacent glass is virtually nil, so the total result can scarcely be improved by the fireproof masonry.

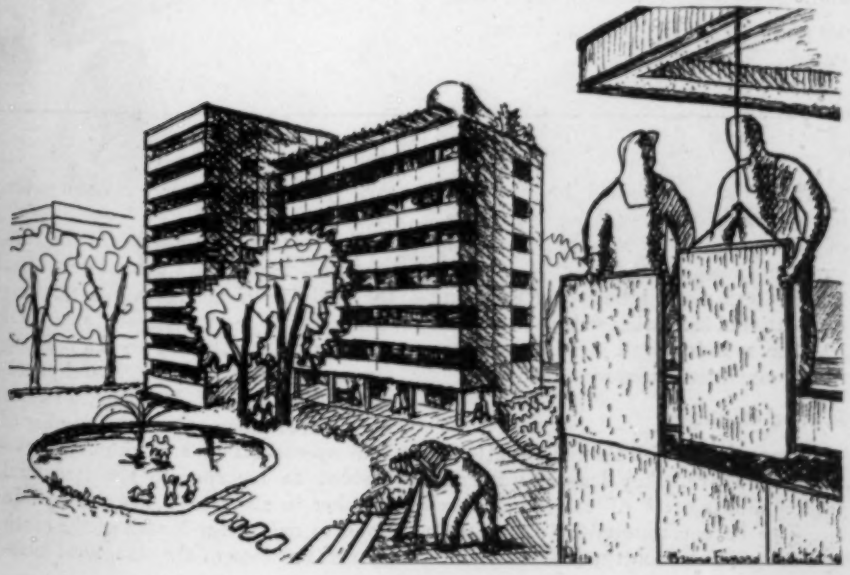
Accepting the desirability of an encased skeleton, a great many experimenters have worked on the problem of a thinner, lighter "curtain" or filter wall, produceable industrially in larger units ready for assembly by labor easily trained for the simple job.

However difficult it would be, as a matter of sound engineering sense, to justify the high fire resistance required by public authorities in the non-glass areas of this filter screen, designers find it is necessary as a practical first step to meet the existing legal requirements.

Meanwhile the architectural profession has arrived at the point where it can handle thin straightforward filter-screen walls satisfactorily both in function and design.

The research reported in these pages is the latest step in a twenty-five year series participated in by researcher Robert L. Davison, and an experience only slightly shorter on the part of architect Howard Fisher.

In 1946, the last previous step was a careful investigation of the "curtain" or filter-screen exterior wall by Davison and architect William Lescaze, subsidized by the non-profit private New York Housing Trust. Next page shows the spandrel-panel system that was arrived at in 1946, and that constituted the point of departure.



As a practical matter, the research in both instances assumed existing conditions in the skeleton structure and in code requirements. The object was not to create a new skeleton and skin in combination, but to create a skin that could be applied to conventional skeletons, taking into account all possible variations in column spacing, floor-to-floor heights, fenestration. Above and beyond this, in both investigations it was stipulated that the new curtain wall must out-perform conventional masonry functionally and be not only lower in first cost but more profitable to the owner ultimately.

Both investigations resulted in a panel system essentially "horizontal," consisting of two strips, running around the building: the lower ring attached

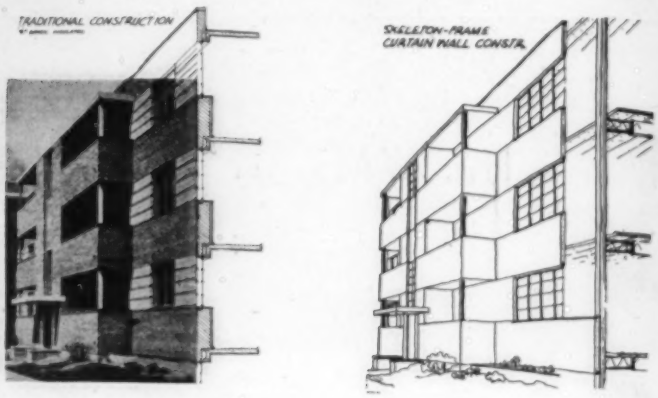
to the spandrel beam and reaching to window-sill height and supporting the upper ring which is composed of any desired combination of window and filler panels.

The greatest difference is that the earlier system required an auxiliary set of lightweight intermediate studs which is eliminated in the later method. (Center of page.) The new system incorporates the required structural strength and wind resistance *in* the panel frames.

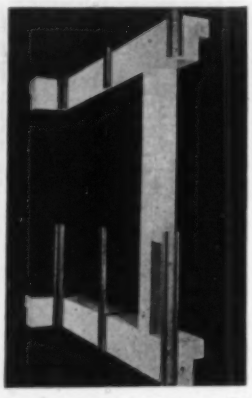
In all possible ways the system has been made independent of variable dimensions in the structural building frame. There is no attachment to vertical columns and no need of conforming to variable column spacing.

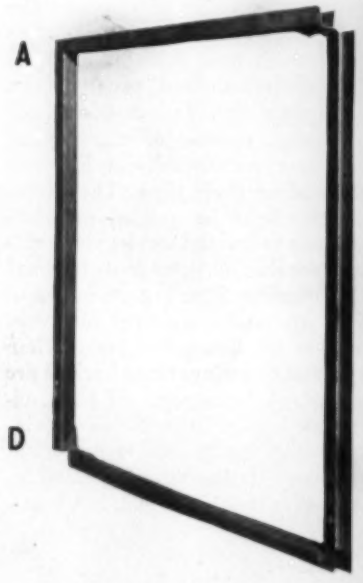
The effect of variable floor-to-floor heights is minimized by the avoidance of structural members reaching from floor to ceiling: there is a full break at the window sill. For low-cost housing applications, the research assumed an average floor-to-floor height of 8 ft. 8 in., and use of steel casement sash having a vertical dimension of 4 ft. 2⅞ in., leaving a spandrel height of approximately 4 ft. 4 in. Spandrel widths were taken at 4 ft., conforming to dimensions of most facing materials. The resulting panel dimension of 4 ft. by 4 ft. 4 in. was within the limits demanded for easy handling. Using foamglas as an insulating material in metal-clad panels, a thickness of 3 in. was found adequate for a 1½-hour fire rating, or a thickness of 4 in. for a 2-hour rating. *Structurally* the 3-in. panel was still intact under test at the end of 4 hrs. These dimensions yielded more than adequate, but not wasteful, structural strength and insulation.

THE CONCEPT OF THE THIN CURTAIN OR FILTER WALL



Thick masonry walls (left) reappeared in taller buildings, as a code requirement, after the "unbalanced" progress one hundred years ago resulting in cast-iron and glass walls. The thin "filter-screen" wall (right) is said to overcome obstacles, including fire





A 1946 research of R. L. Davison with Wm. Lescaze resulted in this system of auxiliary studs. In the present research, 1947, these are replaced by self-contained frames

Overall objectives:

1. A spandrel thinner than the conventional masonry wall, creating added floor area within the building line.
2. A wall lighter in weight than conventional masonry walls, permitting reductions in structural framing sizes and in foundations.
3. Prefabrication of spandrel wall in units of the largest size that can be handled efficiently and can be adapted easily to varying building designs.
4. A wall so designed that it can be easily and quickly placed, employing a minimum of special equipment and skilled labor.
5. The new wall should be completely prefinished, inside and out.
6. It should be capable of being placed entirely from the inside, so that outside scaffolding may be eliminated.
7. It should have strength, durability, weather resistance, and fire resistance adequate for its needs, but not wasteful.
8. The new wall should be practical for any multi-story building regardless of floor plan, window arrangement, or structural framing system.
9. The wall should have better than conventional insulation value.
10. The spandrel wall should cost less than conventional construction.

Method of Attack

In accordance with the plan of attack described above, a key drawing was first made, showing all of the conditions likely to be encountered in actual use and designating each type of panel and each joint with a letter or number symbol.

The first joint studied was the connection between the spandrel panel and the building frame. Previous thinking had called for a separate structural member to be attached to the building frame and to which the spandrel panels were later fastened. In order to reduce the number of parts and the number of field operations to a minimum, it was decided to incorporate the structural member in the frame of the panel. In order to reduce the length of the cantilevered portions of the structural mem-

ber, the connections to the building were spread as widely apart vertically as possible, being made at the top and bottom of the steel beam (with 2 in. of fireproofing), or a 12-in. reinforced concrete beam. Provision was made for variation in the depth of the spandrel beam in increments of 2 in.

Instead of attempting to level each spandrel panel separately, a continuous steel angle is first anchored to the building structure, at the top of the spandrel beam, and levelled, plumbed and trued by conventional building techniques, such as shims, grout, and slotted holes. A similar continuous angle at the bottom of the spandrel beam is then placed by jig from the upper angle. These two members form an accurate framework to which the spandrel panels are then attached. (Step 2 and 2a, page 139.)

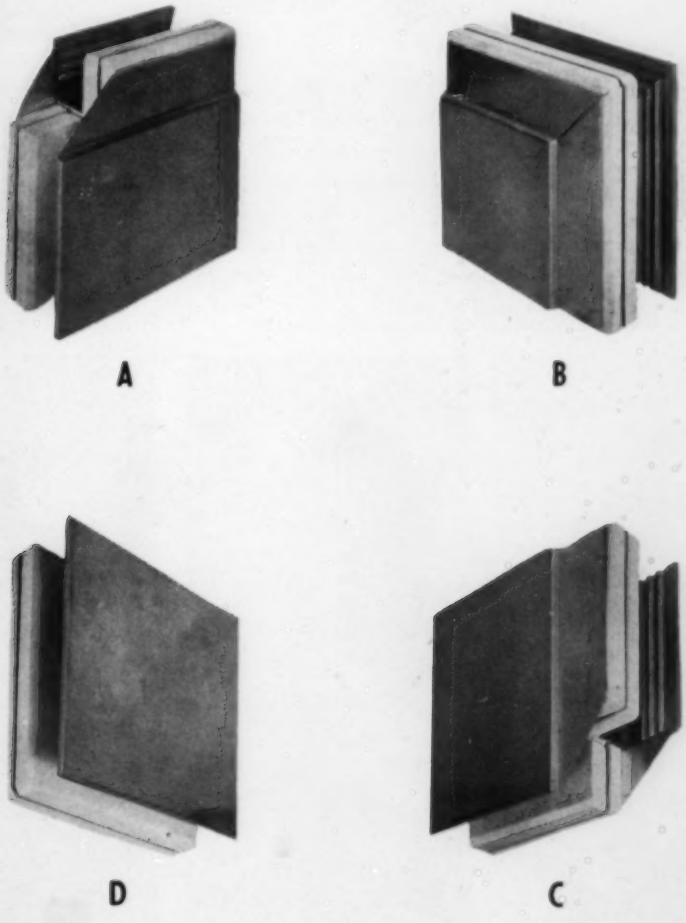
The vertical joint between adjacent spandrel panels was attacked next. The general requirements of a joint are to (a) keep adjacent panels together, (b) keep panel surfaces in perfect alignment, (c) prevent the passage of water, vapor, and fire, and (d) prevent panels from rattling. Another requirement, to allow tolerance for variation in panel size, was finally adopted, but only after serious consideration had been given to a type of interlocking joint in which each panel, as it is placed, is automatically pulled up tight against the adjacent panel. This type of joint results in a non-modular design in which the cumulative error due to the variation in panel size must be taken up by special corner or filler pieces. This scheme was considered practical only for buildings with large perimeters and few breaks in plan. Manufacturing tolerance for panels has been assumed to be plus or minus $\frac{1}{16}$ in. A modular type of design was adopted in which this variation is taken up in the width of the joint, resulting in a joint nominally $\frac{1}{8}$ in. wide, which may actually vary from $\frac{1}{16}$ in. to $\frac{3}{16}$ in. A thorough study was made of various types of joints: spline, tongue and groove, and lap. The solution as finally developed consists of two interlocking channels, insulated from each other and weather sealed at the faces by spring metal strips or rubber gaskets, or by caulking, if necessary. Through conductivity of metal between inner and outer faces has been avoided in all cases. This prevents condensation on the inner face and improves the fire-resistive qualities of the wall.

In the first try (which was designated "Scheme A") the different joints at the top and bottom of the spandrel panel were so designed that either a window or an intermediate panel could be installed at choice. In this scheme the joints were varied to obtain the best individual solution for every new condition, as for example at sills, window heads, etc. Panels could be positioned easily and erected beginning at any point; but the variety of joints, and especially of corners, would cause complication in manufacturing. (No photos.)

Therefore a new approach was taken. Since the vertical joint between panels appeared to be an excellent joint, interlocking and self-aligning, it was decided to use this basic design for all joints. This resulted in a heavier panel frame than was theoretically necessary, but permitted great simplification and economy in fabrication. The joint was modified and spring metal strips were added to make it tight fitting. No field connections are required other than to the building structure (1 bolt per 17 sq. ft. of wall). Windows are installed at the factory in a frame having the standard interlocking joint. Window panels are then placed in the wall like any other panel, without need for mastic, field drilling, or careful setting. The resulting system, designated Scheme B, seems to eliminate entirely the disadvantages of Scheme A: it has no extra parts and no field connections, and is reasonably simple to manufacture.

Scheme B, although it represents a considerable overall improvement, has its own disadvantages: because of the tight joint it is difficult to position the panels accurately; erection must be continuous from the bottom of the building to the top; the joints surrounding windows present an asymmetrical appearance. Present effort is being concentrated on the elimination of these points without sacrificing the advantages that have been gained. Field erection tests of full-size panels, which will be held shortly, will be an important part of this study.

Present designs are based upon a panel having perfectly smooth faces inside and out, and with no exposed fasten-



Each "spandrel" panel or other panel of the new system is manufactured in a self-contained frame. The four corners, pictured above, are lettered to correspond with the full view (across-page). Though structural and wind-bracing strength are slightly excessive, uniform frames are easier to fabricate and to assemble

ings. This has been done with the idea of imposing the least amount of design restriction upon the use of the new wall. Since a corrugated or otherwise rigidized face may eventually prove to be more economical, or desirable for other reasons, it may be advisable to market a series of stock patterns from which the architect may select; or the architect may create his own design at the cost of a new die for the panel face. It was felt that there might be some resistance on the part of the public to either smooth metal faces or mechanically regular patterns. There was therefore developed an irregular all-over texture which can be used for aluminum, stainless steel, copper or porcelain enamel sheets.

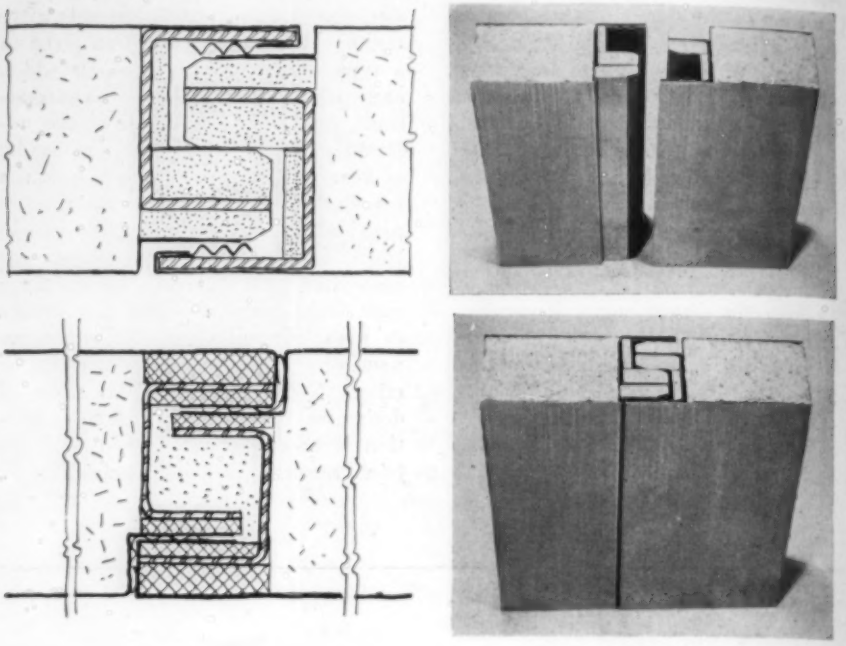
Materials to be used for the wall are not yet finally determined. Present specifications for the standard model call for cold-rolled steel frame and 24 gauge steel faces — stainless on the exterior and baked lacquer finish on the interior. Fireproofing around the frame is of "marinite." Core insulation may be "foamglas," "calcilite," vermiculite with sodium silicate binder, or asbestos or glass fiber with a foam binder. Probably a choice of finishes and insulation will be offered commercially for various applications. Aluminum, copper, and porcelain enamelled steel are other possibilities for facing material.

Although a solid type of insulation is assumed to fill completely the space between the inner and outer faces, the panel is not designed as a stressed-skin sandwich-type panel. A substantial steel frame forms the four edges of the panel; this frame is designed to take the entire load, without help from the core or the faces. This conservative approach was felt to be advisable until the new wall has obtained some measure of acceptance under the building codes of the major cities. It also facilitates the selection of materials for core, faces, and adhesive since their structural properties are less important in this type of design.

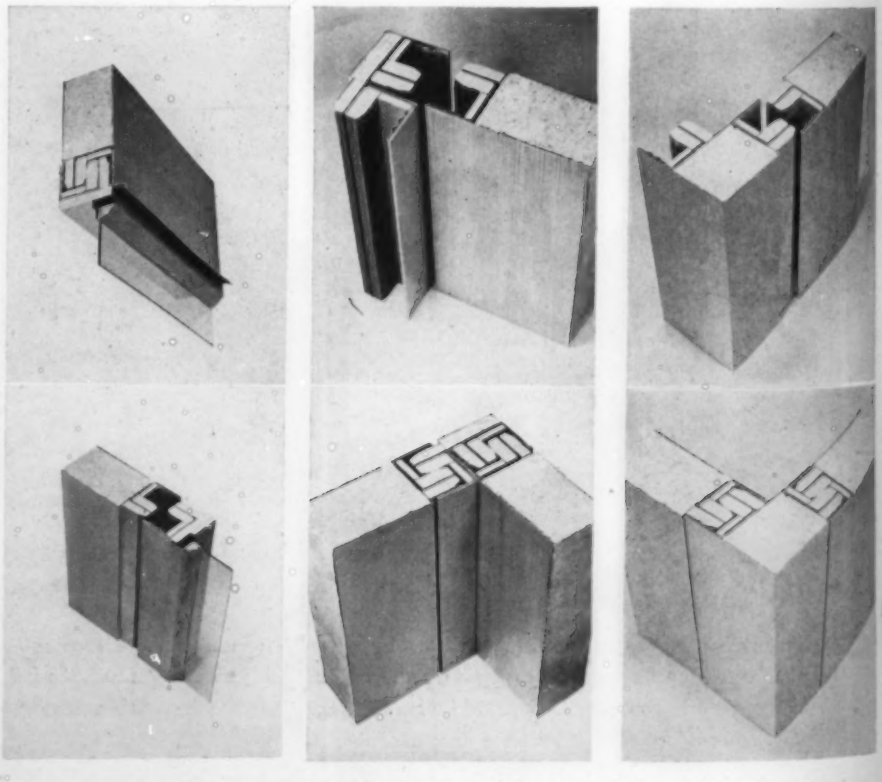
With steel faces and with "foamglas" insulation weighing 11 lb. per cubic foot, a 3 in. spandrel panel (17 sq. ft.) weighs 138 lb., and a 4 in. spandrel weighs 152 lb. With aluminum faces, the panel weight would be 22 lb. less, or only 116 lb. for 3 in. thickness, and 130 lb. for 4 in. thickness. The reduction of dead load by the use of such a wall in a tall building would yield pronounced savings in column and footing sizes.

An overall heat-loss of about 0.13 Btu/hr./sq. ft./° F is anticipated for the 3 in. wall, and 0.10 for the 4 in. wall. This is more than three times as good insulation as a conventional 12 in. masonry wall plastered (0.34) or an 8 in. wall furred and plastered (0.32).

A UNIFORM FIREPROOF JOINT, NO THROUGH-CONDUCTION

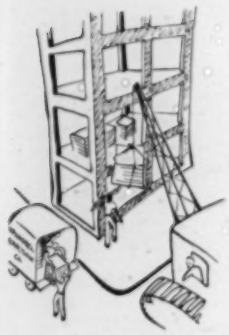


Drawing (top left) corresponds with the photographs on this page. It displays the basic scheme of two interlocking C's of metal, isolated from one another by strips of "marinite" to provide insulation, prevent through-metal heat conduction and the resultant condensation. (Lower drawing shows a later modification intended to insulate the metal channels from the exterior and interior panel faces.) Photos at top of page show the basic joint. At bottom of page: panel with built-in window frame (left pair); corner strip (center pair); corner strip with filler panel (right pair). ("Marinite" is a fireproof composition board that has long been used on ships)



ARCHITECTURAL

ERECTION IS WORKED OUT CONTINUOUSLY FROM BOTTOM TO TOP



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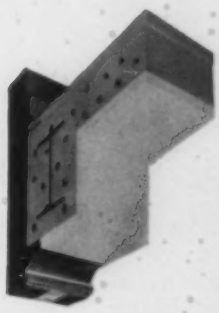

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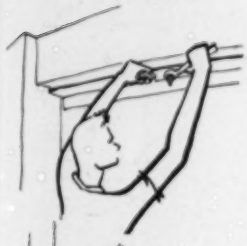

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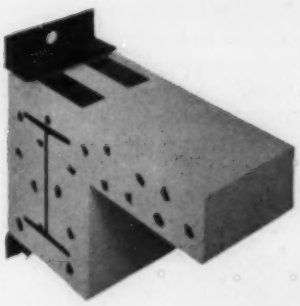

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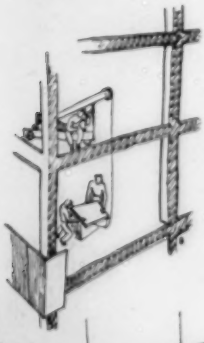
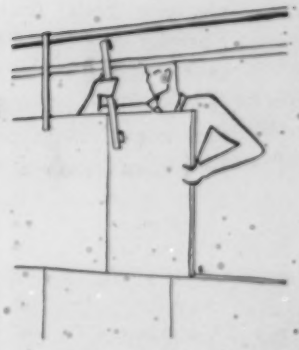


3

1, Materials stacked ready for use; 2, a & b, continuous angles are leveled, shimmed, and bolted to top and bottom of spandrel beam; 3, panels power-hoisted; 4, first panel held to top of beam by hollow bolt *at flanges; 5, adjoining corner of second panel bolted* through *hollow bolt of first panel; 6, process repeated at bottom of spandrel beam; 7, 8, integral window panels, or filler panels, bolted and held temporarily by a strap jig; 9, strap jig removed as next spandrel panel is placed; 10, possible portable scaffold and lift for large-scale work*



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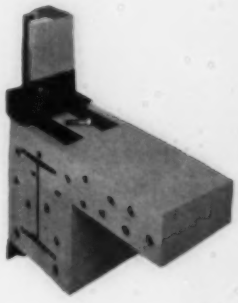

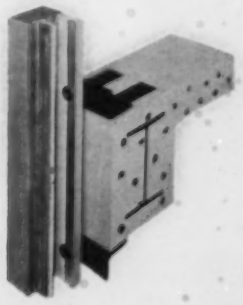

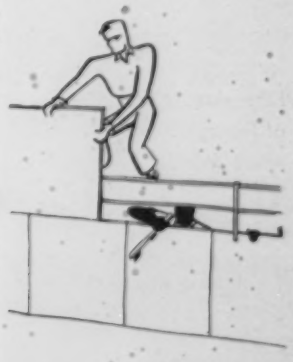

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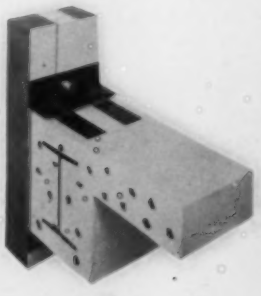


10

FIBERGLAS BUILDING

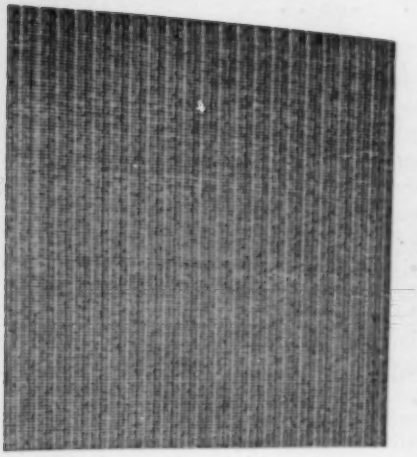
MORE than a score of Fiberglas materials, ranging from air filters, thermal insulation batts, acoustical blankets and tiles, to glass yarns for fabrics, are used in the new building of Owens-Corning Fiberglas Corporation, shown at the right. The building, a completely remodeled brownstone, houses the firm's New York staff and serves as a finished demonstration of the architectural uses of glass in fiber form.

The architects, Skidmore, Owings and Merrill, were asked to use Fiberglas materials wherever practical, regardless of whether they had been used before in an office building. Several of the acoustical wall and ceiling treatments, for example, were designed originally for industrial plants.

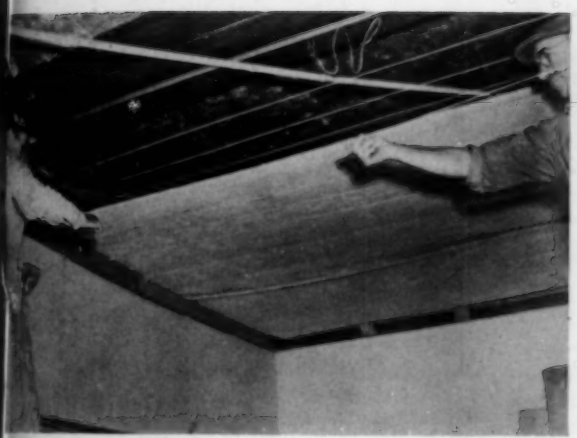
Structural use of Fiberglas is in the form of a fabric impregnated with asphalt, used as a waterproofing membrane between the limestone face and the brick backing. Fiberglas insulation is installed under all floors and beneath the roof. The building is completely air conditioned, with banks of Fiberglas air filters for straining out dust and pollen. Air ducts and steam piping are Fiberglas-insulated.

Open office area and reception group. Acoustical wall treatment consists of an aluminum grille backed by a dark Fiberglas mat over Fiberglas batts between furring strips. The suspended ceiling (Miller system) is Fiberglas acoustical board resting on fluorescent light troffers, as shown at right, across-page

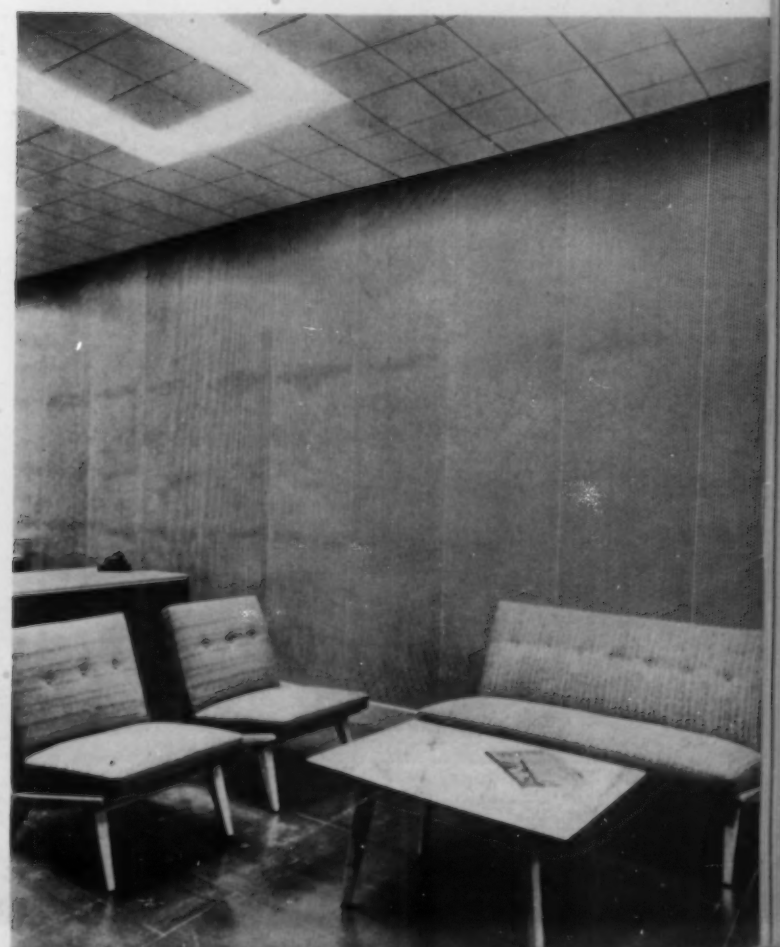
Below, private office. Walls are surfaced with resin-impregnated Fiberglas mats cemented to plasterboard. Below right, for a sound-absorbent ceiling acoustical Fiberglas blankets are hung on a platform of Fiberglas cords, beneath which will be white fabric of woven Fiberglas yarns



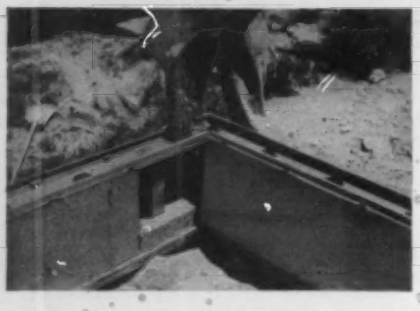
Another executive office. One wall is paneled and "padded" with acoustical blankets covered with black and white Fiberglas-wool fabric, close-up at left. Ceiling is Fiberglas acoustical tile (Securitee system)



Below, reception area. Here, as elsewhere throughout the building, Fiberglas yarns are incorporated in upholstery fabrics. For room quiet, since typewriter desks adjoin, the wall is faced with perforated aluminum sheets fastened to furring strips, with Fiberglas batts between. Installation is shown in photo, below left



PRODUCTS for Better Building



Concrete skeleton system of house construction. Above, basic elements are concrete-filled steel channels and square tubes, to which are clipped side panels of insulating board. Below, wall removed to show steel-encased concrete framework

CONCRETE STRUCTURAL SYSTEM FOR HOUSES

A concrete skeleton system of construction is being used for low-cost midwest houses. Using two types of lightweight interlocking metal members, to which side panels of insulating board of plywood are secured by metal clips, the new process enables unskilled workers to erect walls of steel-encased concrete framework without the use of heavy machinery. Assembly is as follows: first, cement is poured into channels placed along the top of the footing or basement wall. Sections of insulating board are then fastened on each side of this bottom channel by means of metal clips. The second channel strip is clipped to the top edges of the insulating board, square tubes inserted into openings in the channel, and cement poured into the tubes. The lower ends of the tubes hang slightly above the channel base below so that concrete spreads out at its base. The process is then repeated as the wall rises, level by level. The Modern-Wall Co., Box 266, Osborn, Ohio.

GLASS-LAMINATE PANELS OF VARYING WIDTHS

An unusual new glass and plastic laminated building material has been introduced under the name of *Prest-Glass*. While retaining the sheen and permanence of glass, it is flexible for shaping to curved surfaces, non-brittle, and elastic in the sense that it snaps back to original shape after bending. Prest-Glass comes in corrugated panels of varying widths and heights up to 8 ft.; translucent or opaque, dull or glossy, and in a choice of 15 colors. It is said to have great dimensional stability, showing no measurable changes in size over a wide temperature range, so that cracking, bending, or buckling is eliminated. Its fire rating is noncombustible. The material can be cut with shears and power tools, and can be nailed, stapled, punched, trimmed, and cemented, lending itself readily to a number of architectural treatments. Prest-Glass, Inc., 8 E. 12th St., New York, N. Y.

Mortar sealant for glass brick walls

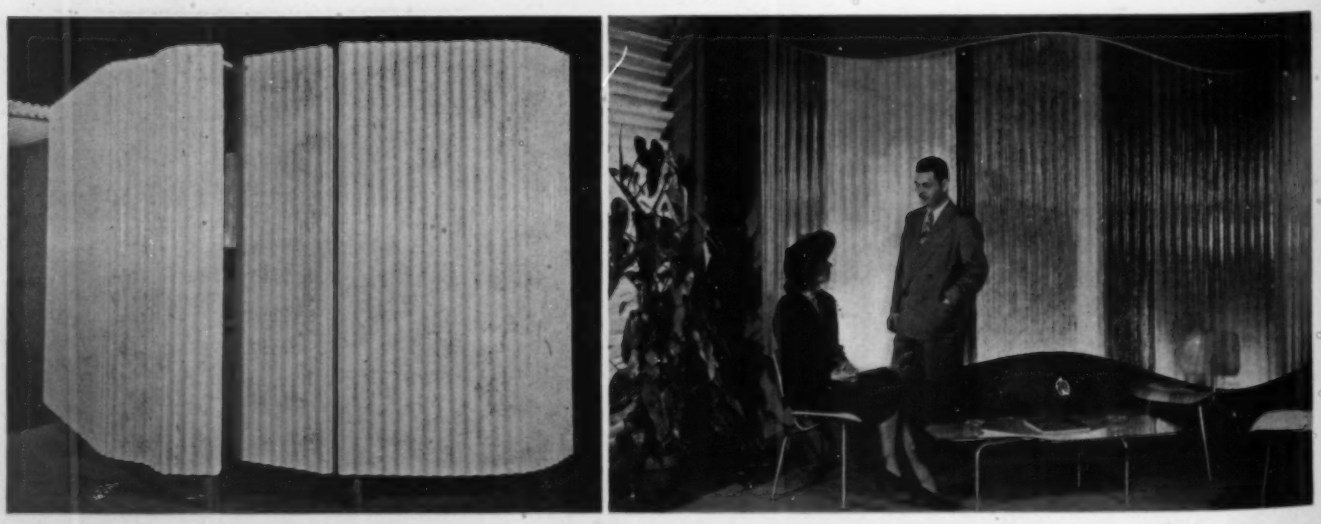
SEAL FOR GLASS BLOCKS

A new mortar sealant has been formulated especially for glass block mortar joints. Since glass is nonporous, ordinary mortar often fails to form a good mechanical bond. When the mortar shrinks, cracks appear, leaving an opening for moisture penetration. The new mortar sealant, known as *Klee Sealant*, is of plasticlike consistency, rubbery when dry, and is said to bond tightly to mortar, glass, tile, brick, metal, and wood. Application is by caulking gun, or with a brush when the sealant is thinned with suitable solvents. Limited quantities are available; in white or colors. The American Fluresit Co., 635 Rockdale Ave., Cincinnati 29, Ohio.

ROOFING NAILS

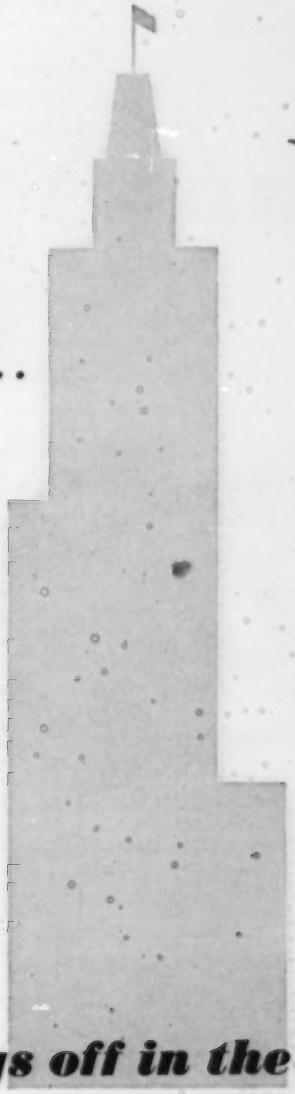
Several manufacturers are offering umbrella-head, screw-type, and straight nails with *Gora-Lee neoprene washers* already in place, for fastening metal roofing and siding. Principal attributes of the washers are quoted as (1) long-lasting resilience, (2) the effective sealing of tiny cracks and crevices around nail holes, and (3) the elimination of corrosion resulting from contact between dissimilar metals. Accordingly, pro-

(*Continued on page 164*)



Glass-and-plastic laminated panels are flexible and can be bent to fit curved surfaces; come in colors, translucent or opaque

it goes on the **ROOF...**



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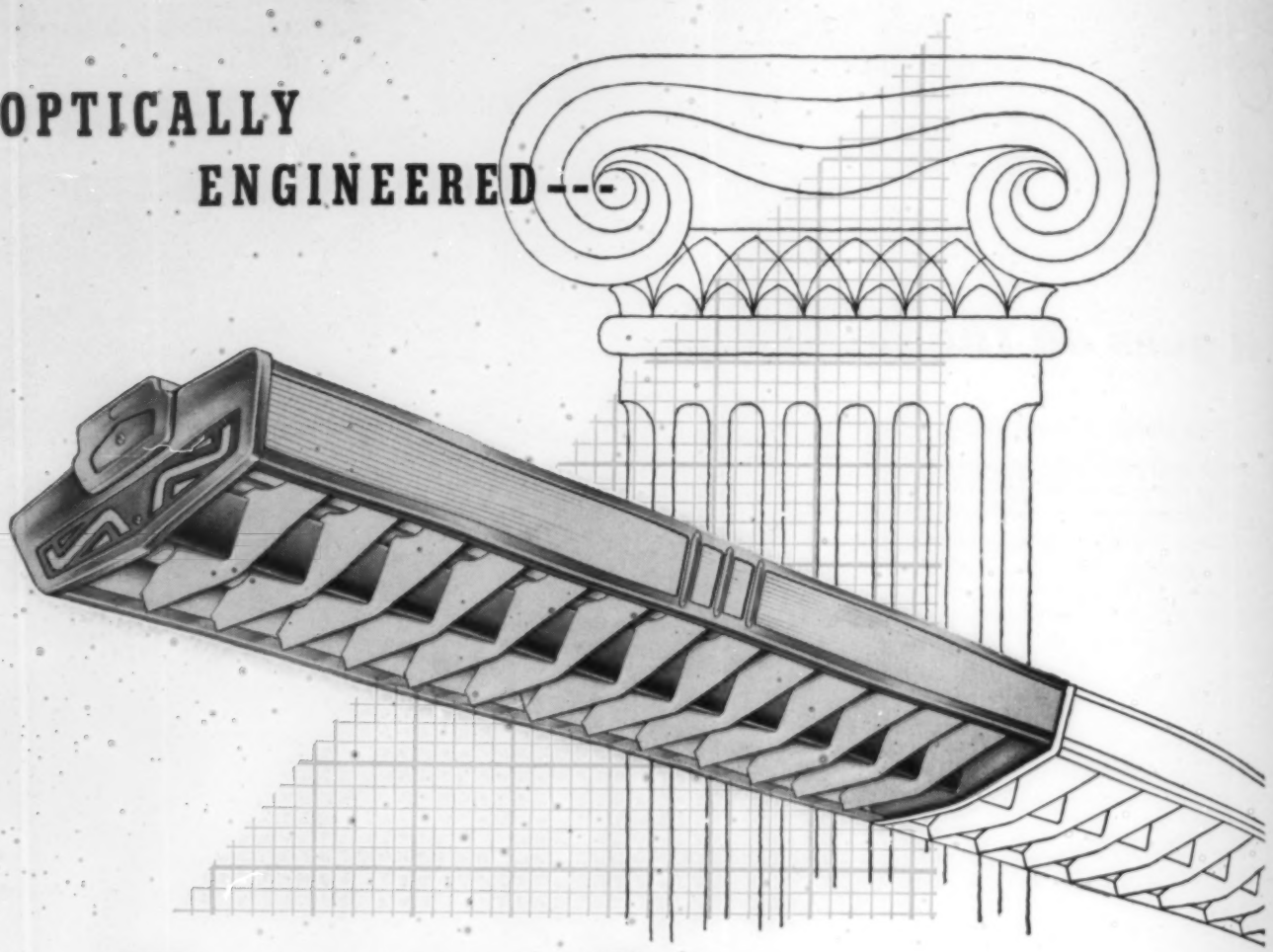
OPTICALLY ENGINEERED--



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AIR SUPPLY BY NATURAL VENTILATION *with special reference to schools.*

(Adapted from "Space for Teaching," by William W. Caudill, Bulletin of Agricultural and Mechanical College of Texas)

Air movement around the building

Air movements inside any building depend on the velocity and direction of air movement outdoors.

Every locality has its own characteristic "wind rose" showing the average velocity and direction of prevailing breezes month by month throughout the year. In some localities the prevailing direction as well as the velocity varies with the season; in others the direction may be relatively constant. For most localities data are obtainable from the Weather Bureau.

Site factors qualify these general averages. Trees, tall buildings and other major obstructions must be studied at each site.

Pressure and suction effects

Only a small fraction of the air blowing against the face of a building effects an entry; the remainder is forced around and over the structure and creates a suction area above the building and on the emergent side. The air is pushed in on the windward side or sides and pulled out on the other sides and at the top.

Air movement within the building

To obtain efficient natural ventilation within a building it is necessary that inlet openings and outlet openings have approximately the same area. Rooms having windows on two exposures (preferably opposed sides) will have far better ventilation than those having windows on a single exposure. Again, if prevailing breezes blow at right angles to building walls ventilation will be better than in buildings having their long walls placed at an acute angle to prevailing winds.

The fresh air supply per minute per student, measured in cubic feet, may be computed as follows:

$$\left\{\begin{array}{l}\text{Fresh air supply}\\ \text{per minute}\\ \text{per student}\\ \text{(in cubic feet)}\end{array}\right. = \frac{\text{Area of inlet (sq. ft.) x Wind velocity (ft. per min.)}}{\text{Correction factor (K) x Volume (per child)}}$$

Typical problem

Assume two classrooms, each having sufficient volume to allow 250 cu. ft. per child. *Classroom "A"* faces south and has 100 sq. ft. of screened inlet opening and 35 sq. ft. of outlet opening. *Classroom "B"* faces southeast and has an outlet opening equal to the inlet opening of 100 sq. ft. What is the air supply per pupil per minute in each classroom if there is a 5-mile per hour wind from the southeast?

NATURAL VENTILATION CORRECTION FACTORS

Ratio of Openings A is area of inlets A' is area of outlets	VALUE FOR K Perpendicular to wind	 Diagonal to wind
A equals A'	2	3
A equals 2A'	4	6
A equals 3A'	6	9
A equals 4A'	8	12
A equals 5A'	10	15

If screens or louvers are used over inlets, multiply the value of K by 2; if both screens and louvers are used, multiply the value of K by 4.

Supply in Classroom "A"

The inlet in Classroom "A" is approximately 3 times the area of the outlet. From the Correction Factor Table above we find the value of K to be 18. Wind velocity in m.p.h. may be changed to feet per minute by multiplying by 88; thus (5 x 88) the wind is 440 ft. per min. Applying these values to the formula we have:

$$\text{Air supply} = \frac{100 \times 440}{15 \times 250}$$

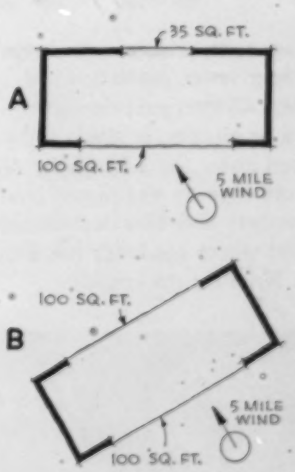
Each child will receive approximately 9.8 cu. ft. of fresh air per min.

Supply in Classroom "B"

The inlet in Classroom "B" is equal to the outlet. From the Correction Factor Table we find the value of K to be 4. Other conditions are similar to those in room "A." Applying these values to the formula we have:

$$\text{Air supply} = \frac{100 \times 440}{4 \times 250}$$

Each child will receive 44 cu. ft. of fresh air per min., or *roughly four times as much fresh air as in Classroom "A."*



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CRITICAL DIMENSIONS GOVERNING SCHOOL DESIGN

(Adapted from "Space for Teaching" by William W. Caudill, Bulletin of the Agricultural and Mechanical College of Texas)

1. Bodily dimensions of children

YEAR	H
5	43"
6	45"
7	47"
8	49"
9	51"
10	53"
11	55"
12	57"
13	59"
14	61"

$= H$

$= \frac{9}{10} H$

$= \frac{4}{5} H$

$= \frac{1}{3} H$

$= H$

$= \frac{1}{4} H$

$= \frac{2}{7} H$

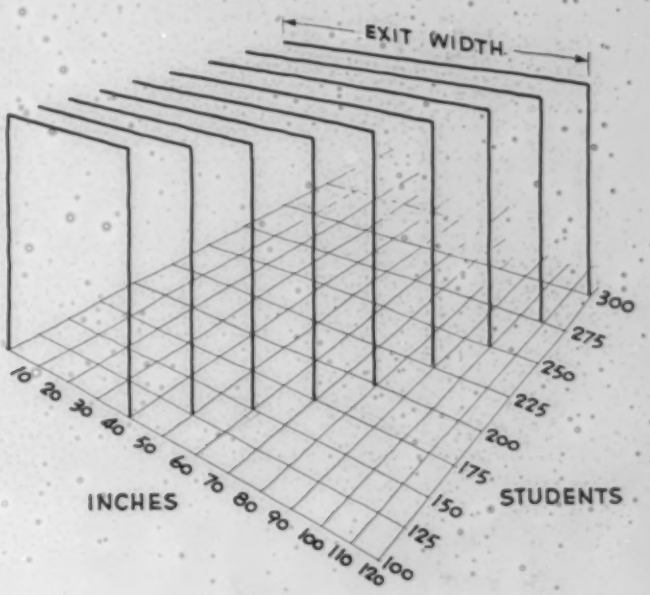
$= \frac{3}{7} H + 1"$

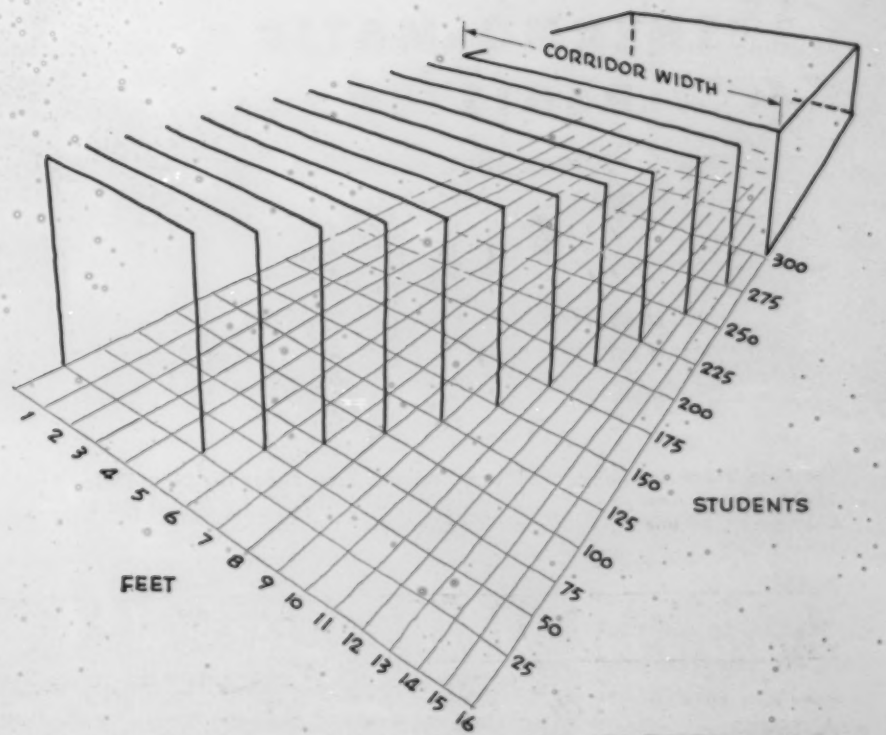
$= \frac{1}{3} H$

$= 1\frac{1}{5} H$

2. Minimum widths of school exits and corridors

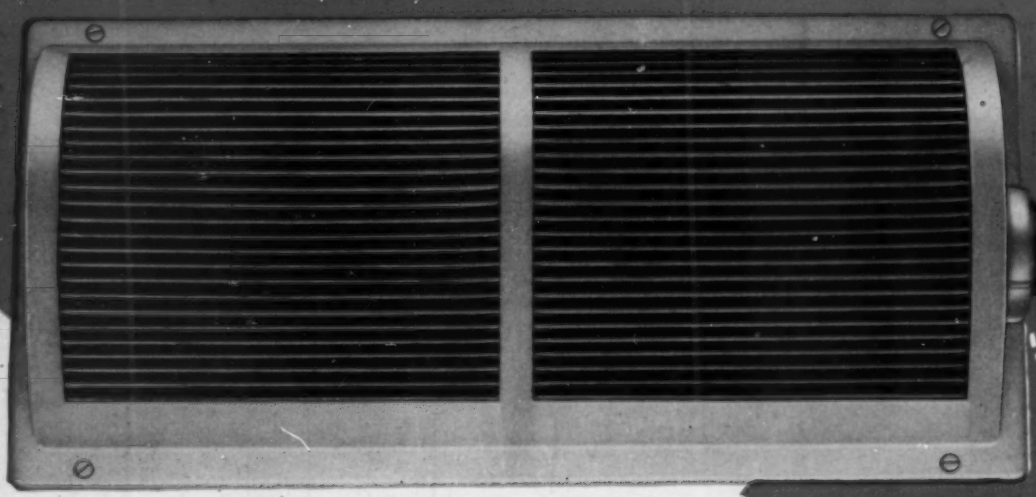
Dimensions in diagrams are National Board of Fire Underwriters' minimum for buildings to be emptied in 2 minutes. Example: a building, or building wing, housing 200 pupils must have an exit at least 80 in. wide (6 ft. 8 in.) and a corridor at least 12 ft. wide in the clear. Width of any lockers, plus open locker door, must be added





KNOCK-OUT NEWS

THE SENSATION OF THE NEW YORK HEATING SHOW



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MANUFACTURERS' LITERATURE

ACOUSTICAL CEILINGS

Nailock Method of Suspended Ceiling Construction (Catalog N-1). Describes the use of Universal Nailing Channels for the mechanical fastening of acoustical ceiling materials, or other nailable materials, to steel, concrete, or masonry. Included are details showing methods of fastening to carrying members by saddle wire tie, spring lock clip, welded lath, or imbedding in concrete; also, specifications, and results of load tests. 12 pp., illus. The Sanymetal Products Co., Inc., 1705 Urbana Rd., Cleveland 12, Ohio.*

DOOR FRAMES

Universal Knock Down Housing Frames (Service Sheet R-8). Specifications for steel door frames for the low-cost housing field; working drawings; photographs showing installation steps; and standard frame opening sizes. 8 pp., illus. The Richmond Fireproof Door Co., Northwest Fourth St., Richmond, Ind.*

ATTIC VENTILATION

Attic Ventilation Code. Booklet listing basic requirements of satisfactory attic ventilation; covering variations in house structure, location of ventilating unit, air changes per minute, air velocities, discharge vents, and installation and operating suggestions. 7 pp. Propeller Fan Manufacturers' Assn., 5-208 General Motors Bldg., Detroit 2, Mich.

LIGHTING

The Science of Light Conditioning (Catalog 17). Booklet presenting a series of data sheets for the selection of incandescent and fluorescent fixtures for commercial and residential projects. Charts and tables are furnished for the solution of problems of light distribution and intensity for each type of unit. 32 pp., illus. Condi-Lite Corp., 889–891 Broadway, New York 3, N. Y.

WINDOWS

Pomeroy Double-Hung Metal Windows. Details and construction features of zinc-treated rolled-steel windows of the "Standard Type" and "Superior Type." 12 pp., illus. S. H. Pomeroy Co., 25 Bruckner Blvd., New York 54, N. Y.*

PARTITIONS

Transite Movable Asbestos Walls. Booklet containing photographs, detail drawings, and short specification forms for movable walls in a variety of panel sizes. The "Imperial Type" consists of asbestos Transite panels on steel studs. Panel backs have metal buttons which fasten into slots on stud faces. The "Universal Type" is a wood core faced on both sides with asbestos Transite, locking together at the ends. 24 pp., illus. Johns-Manville Sales Corp., 22 E. 40th St., New York 16, N. Y.*

WELDING SYMBOLS

Standard Welding Symbols 1947. Welding symbols have been simplified and brought up to date to include 34 of the various welding processes, presented in a step-by-step lecture-type form. The addition of 45 illustrations shows various applications of the symbols, and a chart provides a compact summary of their use for ready reference. 69 pp., illus. American Welding Society, 33 W. 39th St., New York 18, N. Y. *50 cents.*

LIFTS

Sedgwick Dumbwaiters and Elevators (Catalog WR). Describes electric and hand-powered dumbwaiters, residence elevators, and other specialties, and announces an advisory service for the selection of correct equipment, space requirements, and specifications writing. 8 pp., illus. Sedgwick Machine Works, 150 W. 15th St., New York, N. Y.*

HEATING

Fyro-Place Circulates Heat Through Your Home. Folder describing a steel form for fireplaces, with intakes and outlets for improved air circulation; also, fireplace accessories such as louver-type grilles, grilles with electric fans, and fireplace cranes. 4 pp., illus. Price Fireplace Heater & Tank Corp., Buffalo 7, N. Y.

Modine Heating Coils (Catalog 348). Booklet presenting a new and extensive line of heating coils for air handling equipment used in heating, ventilating, air conditioning, and specialized drying applications. Coils are of standard steam, non-freeze booster, and hot water types, each in a variety of tube and fin combinations and casing sizes. Booklet includes piping diagrams and tables for heating coil selection. 48 pp., illus. Modine Mfg. Co., Racine, Wisc.*

What About All-Year Gas Air-Conditioning? The story of automatically controlled gas-fired air conditioning, including charts showing gas consumption by months for a typical residential installation in Chicago, Kansas City, Los Angeles, Houston, and other cities. 25 pp., illus. American Gas Assn., 420 Lexington Ave., New York 17, N. Y.

PLUMBING DRAINAGE

Josam Catalog "J". Guide to the selection, application, and specifications of drains and drainage products, covering all types of drains, interceptors, backwater valves, swimming pool equipment, shock absorbers, shower mixing valves, etc. 252 pp., illus. Josam Mfg. Co., Dept. A, Ferguson Bldg., Cleveland 14, Ohio.*

BATHROOM ACCESSORIES

Marsh Bathroom Accessories. Catalog of a new line of chrome-finished shelves and brackets, towel bars, holders, hooks, and grab bars. Fixtures are designed for flush or recessed mounting. 4 pp., illus. Marsh Wall Products, Inc., North Main St., Dover, Ohio.*

CARPET SHOWROOMS

Planned for Selling. A new book prepared primarily for Smith-Masland carpet dealers by Robert Heller Associates, industrial designers, serves as a guide to effective merchandise presentation and modernization of existing floor covering departments. Suggested plans are based on national field surveys, and innovations in cabinets, fixtures, lighting, and display are featured, with actual working drawings. 48 pp., illus. Alexander Smith and Sons Carpet Co., 295 Fifth Ave., New York, N. Y. *$2.00.*

WALL TILE

Armstrong's Veos Wall Tile. Brochure in color shows various color effects possible with porcelain-on-steel wall tile for bathrooms and kitchens. 16 pp., illus. Armstrong Cork Co., Building Materials Division, Lancaster, Pa.*

CONCRETE

Johnson Concrete Plants: Portable and Stationary. Booklet presenting a summary of the latest developments in concrete plant operating techniques and equipment, to help in the planning of new plants or modernizing old ones. 34 pp., illus. The C. S. Johnson Co., Champaign, Ill.

Pozzolith for Better and More Economical Concrete. Booklet describing the cement dispersing action of Pozzolith, an admixture designed to increase the durability, strength, and watertightness of concrete structures by eliminating excess water from the mix. Includes test results, and photographs of projects in which dispersed cement

(Continued on page 176)

* Other product information in Sweet's File, 1948.

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THE RECORD REPORTS

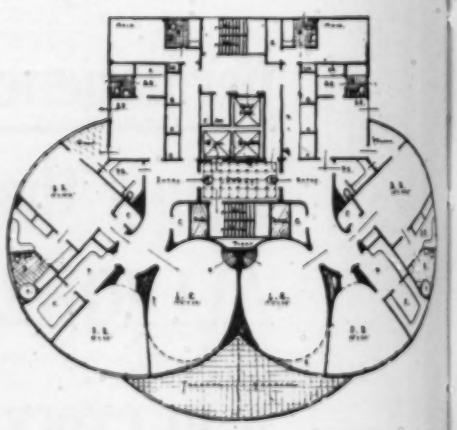
(Continued from page 22)

Apartment house by Wolff and Phillips of Portland, Ore., designed for southern U.S.

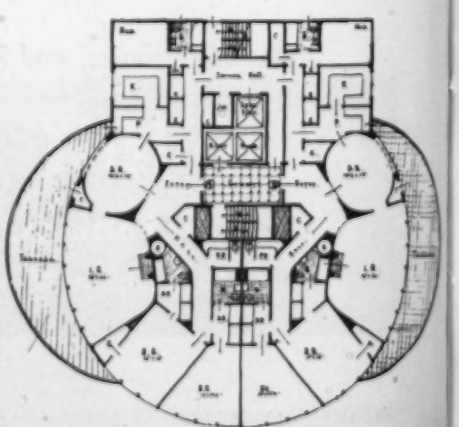
CIRCULAR APARTMENTS

To answer the unusual requirement that each apartment should have a large outdoor terrace and a complete view, Architects Wolff and Phillips of Portland Ore., came up with the unusual design shown above. Planned for an

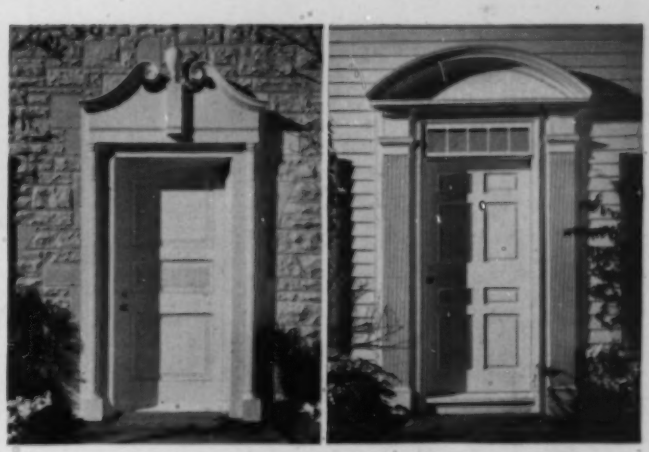
(Continued on page 154)



Each apartment will have its own terrace



All over the house Curtis makes it... *Home!*



SUNNY WELCOME: No matter how small the home or how modest the building budget, you can add the charm of a Curtis entrance. Always in good taste, built to precision standards, Curtis entrances are made in a wide variety of styles. Entrance at left is Curtis No. C-1731, a design by Willis Irvin, architect. Second from the left is C-1730, the work of H. Roy Kelley, architect. Entrance in the stone wall is C-1701, designed for Curtis by architect George W. Stoddard. The fourth design, C-1724, is by Cameron Clark. All Curtis entrances are toxic, water repellent treated.

STORAGE PLUS CHARM! For books, prized china and *objets d' art,* Curtis china cabinets provide ideal storage. Shown here are only two of eighteen styles made by Curtis. Useful for dining rooms, living rooms and bedrooms. At the left is Curtis design C-6505, by Cameron Clark, architect; at right, C-6526, a design by architect H. Roy Kelley.

WARM HOSPITALITY! In today's homes, there's a trend away from the stark and bleak—a trend toward warmth and cheer. A Curtis mantel makes the utility of a fireplace beautiful. Curtis mantels "wear well" because they were soundly designed by leading architects, and have correct proportions and fine detail. At left is mantel C-6059, at right C-6049.

1866 CURTIS WOODWORK

When in New York, visit the Curtis Woodwork Display at Architects' Samples Corporation, 101 Park Avenue

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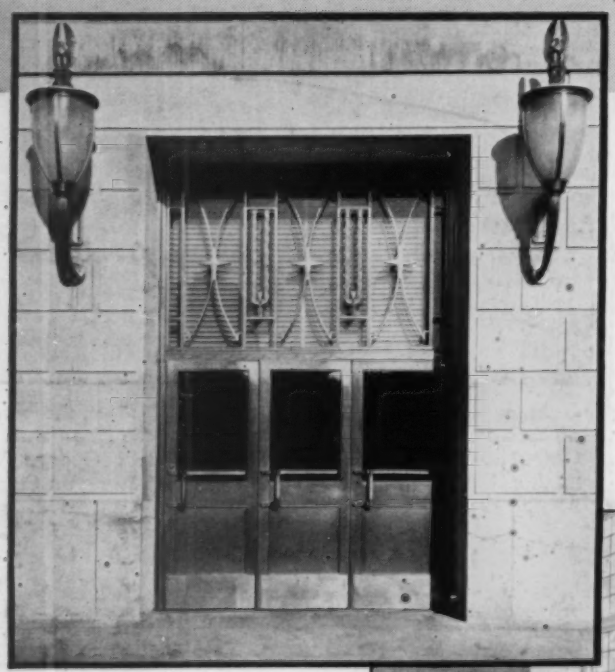

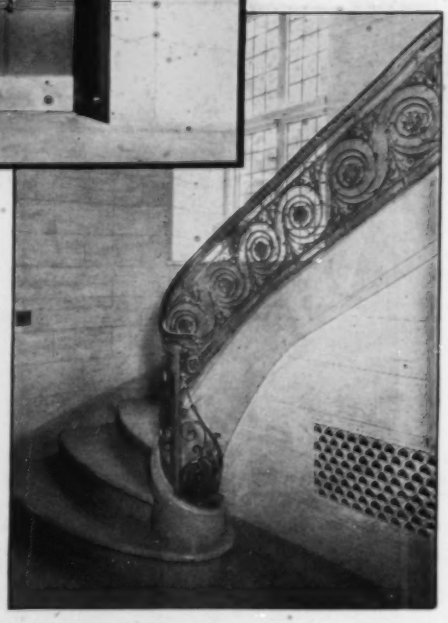

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THE RECORD REPORTS

(*Continued from page 152*)

exclusive neighborhood in the southern part of the United States, the building will face a park and lake. Each floor will have two apartments, as shown on the plans on page 152. The top floor and penthouse will form a separate apartment reached from a private entrance on the side street and a private elevator. Special entertainment rooms and help quarters will occupy the second floor.

Construction will be steel frame with aluminum and heat absorbing type glass exterior walls. The building will be completely air conditioned.

WILLIAMSBURG BUILDING TO BE RESUMED

The trustees of Colonial Williamsburg have authorized resumption of its building program looking toward the completion of the physical restoration which was interrupted by the war. While it is estimated that to complete the entire program will take from five to ten years, and at today's prices will cost upwards of $10,000,000, the immediate program as authorized by the Board of Trustees covers work scheduled for the next two years. The goal is first to complete the restoration of upwards of 100 additional buildings in the restored area, and second to provide augmented facilities to meet the growing demand for expanding business in the city.

The schedule of work in the Duke of Gloucester Street area during 1948 will include the reconstruction of the Guard House at the Public Magazine and extensive rehabilitation of the structure known as the Debtor's Prison.

ARCHITECTS HONORED

Two architects were among the 11 new members recently elected to the National Institute of Arts and Letters. Elected to the Department of Art, the two men so honored are Harrie T. Lindeberg, A.I.A., of New York and Locust Valley, L. I., and James Kellum Smith, F.A.I.A., of New York.

Mr. Lindeberg, a native of New Jersey, started his architectural career in the offices of McKim, Mead and White in Philadelphia, and has had his own office in New York since 1906. He was appointed advisor and consultant to the State Department on Foreign Buildings in 1934, advising on the Embassy Building in Moscow, the American Consulate in Shanghai and the Legation in Helsingfors. Among the buildings which he has designed are the R. T. Vanderbilt Laboratory at Norwalk, Conn., and the Astor Memorial Building at Rhinebeck, N. Y.

Mr. Smith, born in Pennsylvania, re-

(*Continued on page 156*)

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Experienced architects know that nearly every kind of building needs fire protection. For even though the structure itself may be so-called "fireproof", its contents are not.

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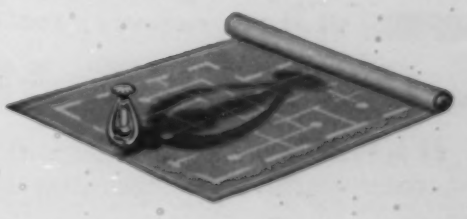
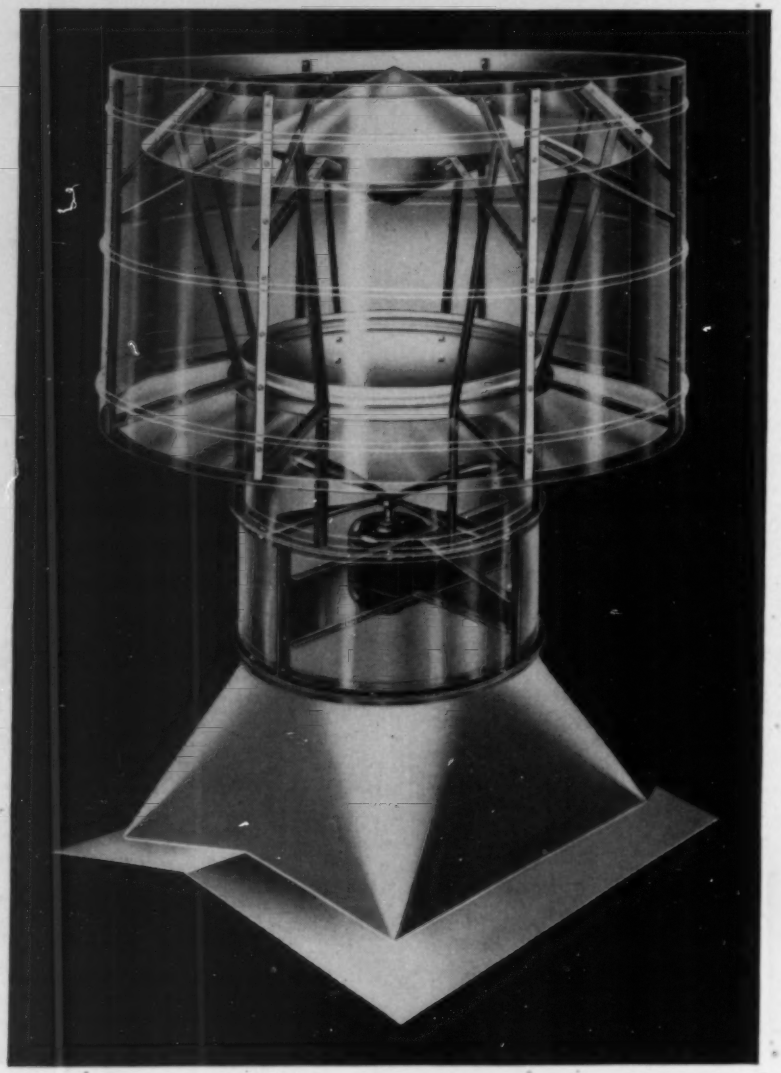


BURT FREE-FLOW FAN VENTILATORS



Energize PRODUCTION

Bad air, whether stale and stagnant or heavy with noxious fumes, definitely slows down production. Rejects, absenteeism—even accidents—also are fostered by such conditions. Adequate planned ventilation is as important to economical, competitive production as proper lighting, tools and machines.

The Burt Free-Flow Fan Ventilator illustrated here will normally exhaust about six times as much air as gravity types. It moves a tremendous amount of air in a very short time. Yet, in some installations its greater capacities are unnecessary. Other, less expensive units will be entirely adequate.

Burt has a size and type of ventilator for every need. On **any** ventilating problem, Burt engineers are available—without obligation—to submit recommendations and specifications. See Sweet's, or write now, for data and catalog sheets.

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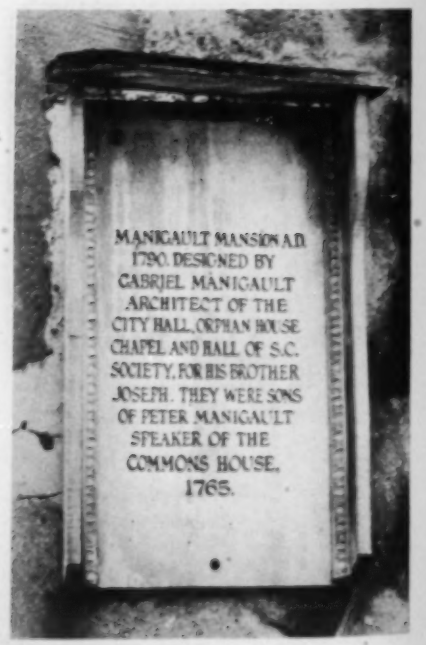
THE RECORD REPORTS

(*Continued from page 154*)

ceived a John Stewardson Memorial Traveling Fellowship in 1919 and the Prix de Rome in Architecture in 1920. He joined McKim, Mead & White in 1924, and has been a member of the firm since 1929. Among the buildings which he has designed are the City Hall, Schenectady, N. Y.; and the U. S. Army Infantry School at Fort Benning, Ga. He has been a trustee of the American Academy of Rome since 1933.

(*Continued on page 158*)

Photographed by Architect Atlee B. Ayres in Charleston last summer: a plaque on a filling station (above) and a nice tribute to a Charleston architect (below)



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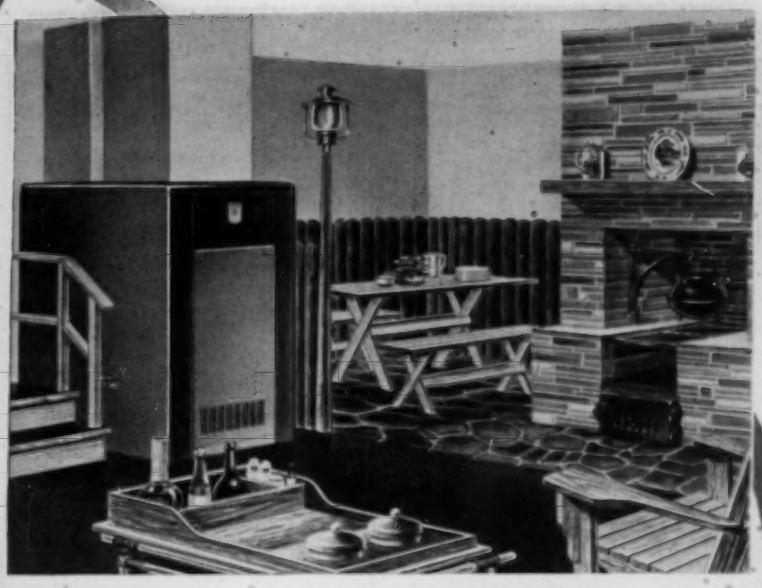

This downstairs grill proves that basements can be more than just places to put the furnace. With its inviting fireplace and dining alcove, the room fairly breathes hospitality. And such a room is made possible by installation of the colorful, compact **SARATOGA** Winter Air Conditioner. The oil fired Saratoga is from American-Standard's famous Sunbeam line of warm air furnaces and winter air conditioners for every type of home . . . and for every kind of fuel.

The **ROYAL HOSTESS** Sink in this smart combination kitchen and breakfast nook provides striking beauty with the latest labor-saving conveniences. Its deep, roomy sink compartment, drainboards, and back ledge for fittings are all one-piece constructed of rigid cast iron for long service, and finished with a heavy coating of acid-resisting enamel for lasting beauty. Fittings are finished in gleaming, non-tarnishing Chromard.

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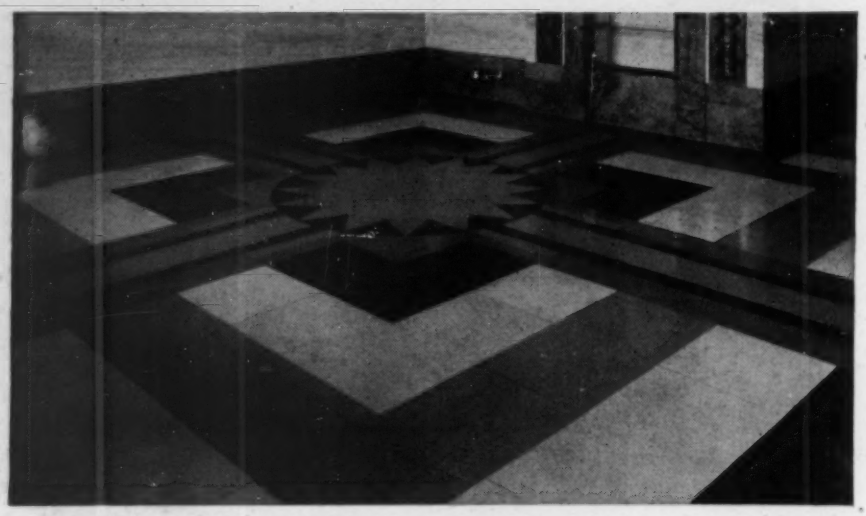
Just as fine chinaware patterns are set against WHITE...



Terrazzo Floor: Samuel Gompers Industrial High School for Boys, Bronx, New York.

Concrete craftsmen choose Atlas White Cement

Delicate colors and intricate patterns of fine chinaware stand out most strikingly against a white background. So, too, a matrix of Atlas White Cement sets off better the color values of pigments and aggregates in Terrazzo, Stucco, Cement Paint and Architectural Concrete Slabs. Such a background has the uniform clarity to complement the desired color overtones, whether in contrast or blend.

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For further information on the uses of Atlas White Cement, see SWEET'S Catalog, Sections 12B/7 and 13B/7, or write to Atlas White Bureau, Universal Atlas Cement Company (United States Steel Corporation Subsidiary), Chrysler Building, New York 17, New York.

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THE RECORD REPORTS

(*Continued from page 156*)

The 7360-page Sweet's Architectural, 1948

1948 SWEET'S IS OUT

The largest collection of manufacturers' catalogs ever assembled in prefiled form is being distributed to 12,000 selected offices of architects, engineers and contractors engaged in building operations by Sweet's Catalog Service Division of F. W. Dodge Corp.

Bound in five volumes, the 1948 Sweet's File, Architectural, contains 7360 pages comprised of 924 catalogs of 780 manufacturers of materials, equipment and devices used in building dwellings, apartment houses, commercial, manufacturing, educational and other types of residential and nonresidential buildings.

Distribution of the seven 1948 Sweet's Files, including the Architectural, will reach 83,000 offices with a combined total of 2143 catalogs comprised of 16,936 pages. In addition to the architectural file, the others distributed by Sweet's are: Engineering, Builders, Power Plants, Product Designers, Mechanical Industries and Process Industries.

BIDS ASKED ON HOSPITAL

The Department of Public Works, State of Ohio, will receive bids until 2 p.m., Wednesday, March 3, for the construction of a 600-bed hospital on the campus of Ohio State University at Columbus.

The General Assembly of Ohio has appropriated about $8,000,000 for construction of the hospital, plans for which have been prepared by Skidmore, Owings and Merrill, Architects, of Chicago and New York. Copies of the architects' drawings and specifications are on file at: Office of the Department of Public Works, Columbus; Office of the University Architect, Ohio State University; Builders Exchange, Columbus; F. W. Dodge Corp. offices in Columbus, Cleveland, Cincinnati and Chicago; and the

(*Continued on page 160*)

GOLD SEAL *Award Winners*

SECOND INTERNATIONAL LIGHTING EXPOSITION

Four Gold Seal-winners (out of twelve) and many Merit Award winners used Pittsburgh Permaflector Equipment in the installations which won them recognition in the Planned Lighting Competition held in conjunction with the Second International Lighting Exposition.

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Architect: Warren, Knight & Davis

Gold Seal Merit Award to:
Lucian Kight & John Martin
Duquesne Light Co.
Entry: Royer's Dept. Store
Architect: Brandon Smith

Gold Seal Merit Award to:
C. B. Marsh
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Entry: Klein's Dept. Store

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Bids shall be sealed and addressed to Department of Public Works, State of Ohio, c/o Business Manager, Ohio State University, 200 Administration Bldg., O.S.U. Campus, Columbus 10, Ohio.

AWARD ANNOUNCED

Lt. Gen. R. A. Wheeler, Army Chief of Engineers and wartime Deputy Supreme Allied Commander of the Southeast Asia Command, has received from the Moles, New York society of tunnel and heavy-construction men, its annual award to a non-member of the organization for his "outstanding contribution to construction progress." The award — a bronze plaque and citation — was presented on February 4.

The Moles award (frequently referred to as the "Pulitzer prize of the construction industry") has been given only twice before to military men — to Lt. Gen. Brehon Somervell and wartime Army Chief of Service Forces, and Rear Admiral Ben Moreell, wartime Chief of Navy's Bureau of Yards and Docks.

COMPETITION DETAILS

Further details have been released on the International Competition for the Design of Low-Cost Furniture, which was first announced several months ago (see ARCHITECTURAL RECORD, Dec., 1947, p. 138). The competition opened on Jan. 5, will close at midnight, Oct. 31, 1948.

Two main categories of furniture are being covered: (1) seating units for one or more persons, such as upright and lounge chairs, sofas, day beds, etc.; and storage units for household or personal effects or for both. Competitors may submit entries in either or both; and there is no restriction on the total number of entries. In each group there will be a first prize of $5000, a second of $2500, and a third of $1250.

Requests for entry blanks and further information should be addressed to Edgar F. Kaufmann, Jr., Director, Department of Industrial Design, Museum of Modern Art, 11 W. 53rd St., New York 19, N. Y.

ELECTIONS, APPOINTMENTS

Walter S. Dayton, of Bayside, N. Y., has been named chairman of the executive council of the Realtors' Washington Committee of the National Association of Real Estate Boards of 1948.

Helen Gacesa, of New Brighton, Pa., has been elected assistant secretary of F. H. McGraw & Co., Hartford, Conn. One of the first women ever to hold office in a major construction company, Miss Gacesa formerly was associated with the Beaver County, Pa., Housing Authority.

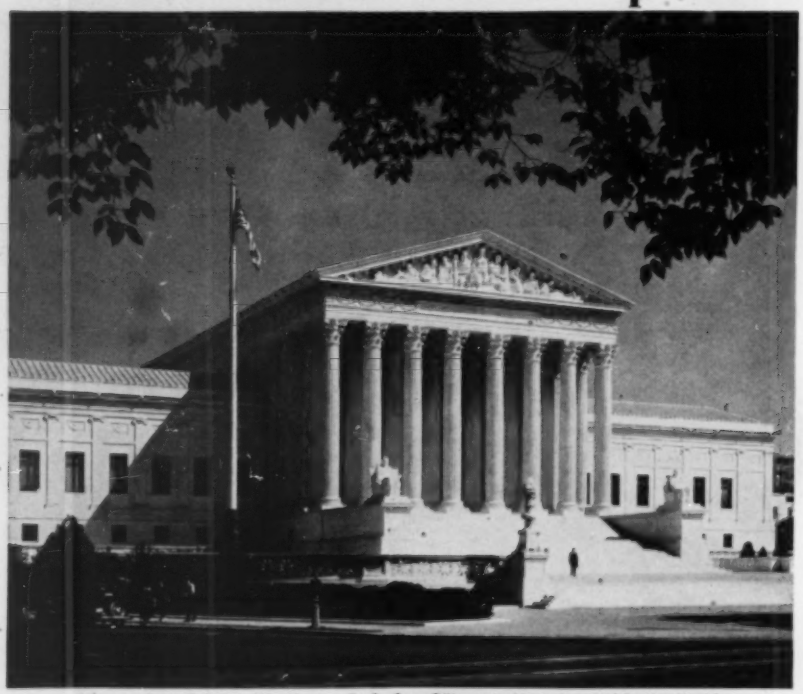
George S. Hunt has been appointed regional manager of the Los Angeles branch of Raymond Loewy Associates, industrial designers.

Joseph P. Wolff, Commissioner of the Department of Buildings and Safety Engineering of the City of Detroit, has been elected chairman of the board of governors of the Building Officials Foundation for 1948. Mr. Wolff has been commissioner of the Detroit building department since 1930. He is a member of the Engineering Society of Detroit, and a director of the Building Officials Conference of America, Inc.

Carl L. Gardner has been appointed executive director of the Chicago Plan Commission, succeeding H. Evert Kincaid, whose resignation became effective on January 15. Mr. Gardner, formerly in charge of all land planning operations for the FHA in Washington, D. C., has been director of the planning division of the Chicago Commission for the past three years.

(*Continued on page 162*)

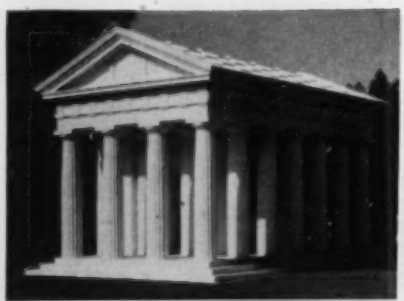
Vermont Marble Stands Supreme



Supreme Court Building, Washington, D. C. Cass Gilbert, Architect. Imperial Danby Marble

From Washington to San Francisco —from the Supreme Tribunal of the Land to the resting place of one of its citizens, Vermont Marble stands—a Temple of Justice and a Temple of Peace.

Yet marble is so adaptable that the simplest store or office, and the humblest cemetery may also be marked and dignified by this durable marble of crystalline beauty.



Nager Mausoleum, Lawndale, California
B. S. J. Cahill, Architect. Imperial Danby Marble

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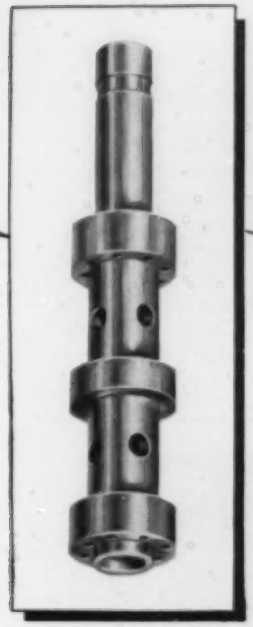
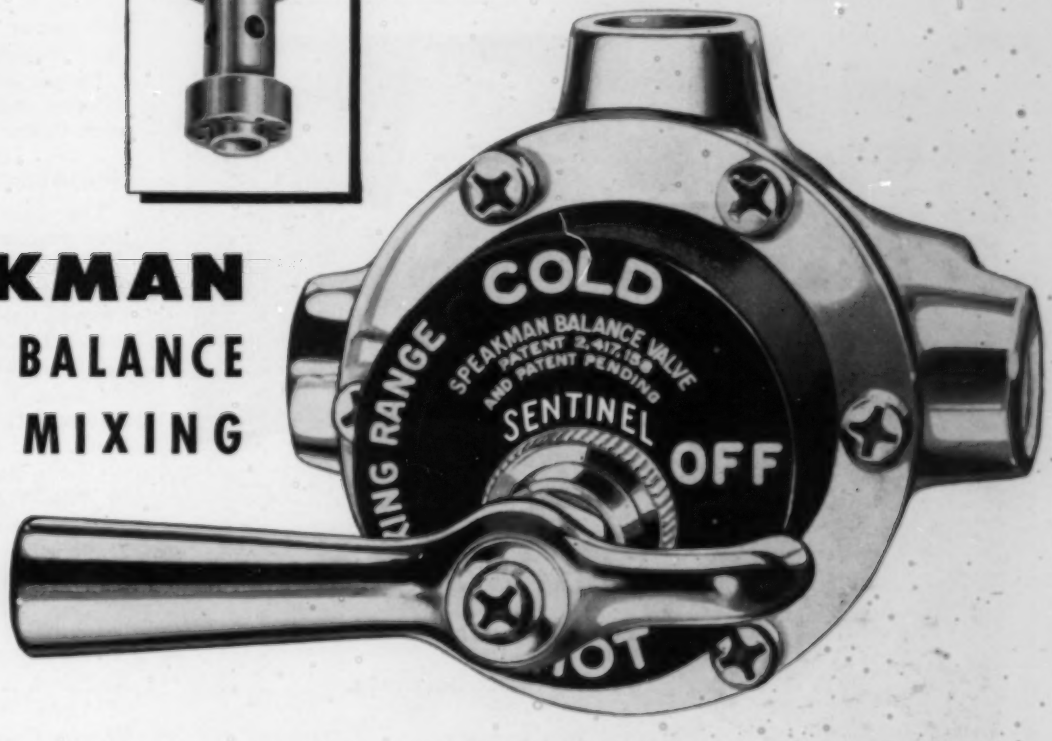
A triumph of engineering



THE F-L-O-A-T-I-N-G SENTINEL

that holds shower temperature steady!

SPEAKMAN SENTINEL BALANCE SHOWER MIXING VALVE



For a long time everyone has wanted a shower that didn't change to scalding hot or freezing cold every time someone turned on the water "down the line."

Now Speakman brings it to you . . . with the *Sentinel Balance Mixing Valve* that positively maintains the water temperature set by the bather.

The patented valve with the removable f-l-o-a-t-i-n-g piston, readily accessible, automatically maintains original temperature by compensating for "down the line" water stealing. And the bather never knows anything is happening! In case of a severe drain upon the supply of either hot or cold water, the f-l-o-a-t-i-n-g *Sentinel* immediately cuts down the high pressure side flow port and opens up the low pressure port—thus maintaining the original temperature as set by bather. Thus, sudden chilling or scalding is impossible. When pressure returns, the *Sentinel* automatically restores the flow to the head . . . at the same temperature as before!

The f-l-o-a-t-i-n-g *Sentinel* has no thermostats, rockers, springs, or other gadgets likely to get out of order. It works on water pressure alone! If excessive alkali ever coats the f-l-o-a-t-i-n-g *Sentinel*, it can be cleaned readily by merely shutting off the *Sentinel* valve. . . . it is not necessary to shut off the Hot and Cold supply to the *Sentinel* Shower Valve. This is a great help where shut-off valves may be located at some distant point and perhaps control the whole bathroom.

We'd be pleased to send you complete detailed information on this new safety *Sentinel Balance Mixing Valve*. Write to Department BV.

"Established in 1869"

SPEAKMAN

SHOWERS AND FIXTURES

SPEAKMAN COMPANY, WILMINGTON 99, DELAWARE

THE RECORD REPORTS (*Continued from page 160*)

From England comes word that Mark Hartland Thomas, F.R.I.B.A., has joined the Council of Industrial Design to take charge of its industrial section, which is directly concerned with offering a practical service to industry on design problems, and particularly with helping industries set up their own design centers. He is also a member of the Board of the Association for Planning and Regional Reconstruction and chairman of the Architectural Science Board of the Royal Institute of British Architects.

Recently elected to the National Board of Trustees of the American Designers' Institute are: Ruth Gerth of San Francisco, Henry Glass of Chicago, Harper Richards, Chicago; C. E. Waltman, Chicago; Scott Wilson, New York; Edward Wormley, New York; John Vassos, New York; George Kosmak, San Francisco; and Fritz Foord, New York.

Through the doors of Jamestown Metal Corporation have come hollow metal products for many of the country's finest buildings.

Main office and factory of Jamestown Metal Corp.

5 ACRES OF ONE-FLOOR FACTORY
designed for straight line, efficient production

As specialists in the fabrication of bronze, aluminum, steel and stainless steel, we offer our services wherever hollow metal doors, interior trim, elevator enclosures, office partitions, cold rolled mouldings and metal specialties are required.

HOLLOW METAL
JAMESTOWN METAL CORPORATION
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OFFICE NOTES

Offices Opened, Reopened

Leslie J. Greenwald, Architect, and Jules G. Mirot, Architect, have opened an office at 127 N. Dearborn St., Chicago 2, Ill., under the firm name of Greenwald and Mirot.

M. De Witt Grow, Architect, has opened an office for the practice of architecture at 4125 Monroe St., Toledo 6, Ohio.

F. Albert Hunt has opened an office for the practice of architecture at 4 Purdy Ave., Rye, N. Y.

George Nelson has announced the opening of an office for the practice of architecture and industrial design at 343 Lexington Ave., New York 16, N. Y.

Joseph Groo Weir, A.I.A., has opened an office at 6 W. Putnam Ave., Greenwich, Conn.

New Addresses

The following new addresses have been announced:

Maurice Bouchard & Pierre Rinfret, Architects, Boulevard Bldg., 400 Blvd. Charest, Quebec City, Canada.

Neil J. Convery, A.I.A., 1060 Broad St., Newark 2, N. J.

Cooper & Perry, Architects and Engineers, 211 W. Hill Ave., Knoxville, Tenn.

George Dress, Architect, 205 E. 85th St., New York 28, N. Y.

Gifford E. Sobey, Architect, 9 Post St., San Jose, Calif.

Firm Changes

John Porter Clark and Albert Frey have announced that Robson Chambers, Architect, is now a partner in the firm of Clark & Frey, Architects, Palm Springs, Calif.

Morgan Stedman, Furber Libby and Dorothy Gray, Registered Architects, have formed a partnership under the firm name of Stedman, Libby and Gray, with temporary offices at 180 University Ave., Palo Alto, Calif.

CORRECTION

In the table entitled "Preliminary Analysis of Hangar Trusses" on page 118 of the April, 1947, ARCHITECTURAL RECORD, the illustration of the "Steel Rib Arch" bears a credit to Bethlehem Steel Co. for use of the photograph. The structure itself is an example of a steel arch structure designed by Arch Roof Construction Co., Inc., of New York, and based on patents owned by that company.

ADDITION

The article by Alden Dow in the November ARCHITECTURAL RECORD ("Planning the Contemporary House," pp. 89–91) was originally prepared as a paper for the Dayton Conference, and was read there.

What good is a house without heat?

This winter is proving many modern houses to be obsolete, due to conditions no one thought possible one year ago.

They cannot be adequately heated because of shortages of certain fuels.

It is predicted that shortages in those fuels will exist for several years.

INVESTMENTS and loans on houses that may become "fuel orphans" are imperilled by inadequate provisions for heating just as the health and comfort of their occupants are endangered.

Now is the time that houses are being designed, loans on proiects being discussed, investments in developments being considered.

To maintain the value of all new construction, provision should be made for the storage and use of anthracite (hard coal), the clean, smokeless, abundant, domestic fuel.

In following issues of this magazine, we shall bring you news of modern developments in heating with anthracite—information that you can use to give modern buildings modern heating.

ANTHRACITE INSTITUTE

101 PARK AVENUE · NEW YORK 17, NEW YORK

(*Continued from page 142*)

ducers claim roofing and siding installed with such nails will not tend to "pull" the nails, and will give longer leak-free service. The Gora-Lee Corp., Stamford, Conn:

GARAGE DOORS

From the outside, the overhead *Calder garage door* presents a smooth unbroken surface except for hardware and inconspicuous panel joints. There are no visible screws and bolts since the covering sheets of aluminum alloy are joined by a lock seal arrangement. Door sections are built up of a combination wood and aluminum frame work. Lifting mechanism is counterbalanced by tempered springs; door sections lift overhead, riding rubber-tired rollers for quiet operation. Size of opening is 8 ft. wide by 7 ft. high; clearance required, 12-in. headroom beyond opening and 4 in. at each side. Calder Mfg. Co., 638 N. Prince St., Lancaster, Pa.

Alumitile Permanently FIREPROOF
There is no end to the advantages of Hastings Alumitile . . the amazing ceramic-like tile . . so easy to apply and lasts the lifetime of the home
Besides being fireproof — not affected by heat — Alumitile is waterproof, chip-proof, impervious to alkali, resists stain and won't crack or peel. Light as a feather, Alumitile is unbelievably economical — cost much less than conventional tile.
Water proof
Chip proof
Stain Proof
Architects — Include Alumitile in your next plans. It's your best bet in 1948.
Available in 14 beautiful colors: Gleaming White, Cream, Peach, Dubonnet, Apple Green, Dark Green, Canary Yellow, Black, Light Blue, Dark Blue, Ivory, Grey, Flame Red and Rose — from which virtually unlimited color combinations are obtainable.
Sizes: Field Tiles, 5" x 5"; Trim Tile Cap., 2½" x 5"; Stripe, ½" x 5"; Base 5" x 5". Also outside corners and wall plates for electrical outlets available in matching colors
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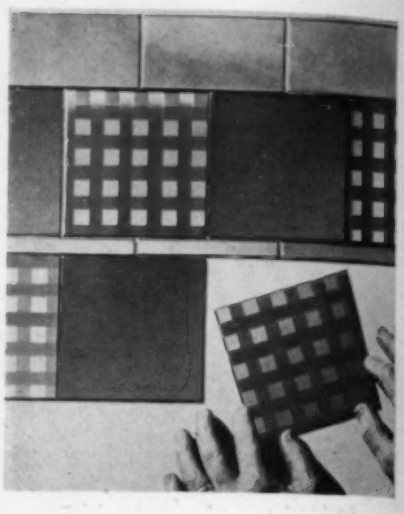
HASTINGS, INC. MICHIGAN.
WRITE TODAY to the Metal Tile Products, Inc., Hastings, Michigan, for full information regarding the greatest and most durable Bathroom and Kitchen Tile that has been perfected as a result of wartime needs and research.



Chromium-plated and aluminum wall tiles

WALL TILE

Two new types of all-metal wall tiles have been introduced: a chromium plated zinc tile and a colored aluminum tile. Chrome tiles have a striped, bright, checked, or satin finish; colored tiles come in black, gold, maroon, royal blue, and sage green. According to the manufacturer, color is applied by a special process that makes it integral with the metal. Tile-O-Chrome Corp., 4421 N. Clark St., Chicago 40, Ill.

FIRE-RESISTANT PAINTS

A new line of fire-resistant finishes can be applied over old paint or used as an original finish. Known as *Fyr-Kote*, the finish is said to resist fire in three ways: (1) by releasing carbon dioxide to smother flames, (2) by forming a tough fusion film to protect wood fibres beneath, and (3) by the use of a non-inflammable resin base. Fyr-Kote is available in three types of finishes: Interior Flat Finish, which is washable and comes in white and pastel colors; Brilliant Base Coat, a white interior undercoat; and Brilliant Finish, a lustrous white enamel. The Fyr-Kote Co., 1823 Washington Ave., St. Louis, Mo.

ASPHALT ROOFING

The Asphalt Roofing Industry Bureau has been working toward standardizing application specifications for asphalt roofing. Distinction is now made between standard and "wind-resistant" conditions. Roll roofing, when applied by the usual exposed nail method, and even 36-in. wide sheets with concealed nails, probably will no longer be recommended for exposed windy locations. Double coverage rolls and 18-in. sheets with concealed nails should be used.

The popular three-tab square-butt strip shingle ordinarily is applied 5 in. to the weather and secured with six nails, but when a heavier roof is wanted this

(*Continued on page 166*)

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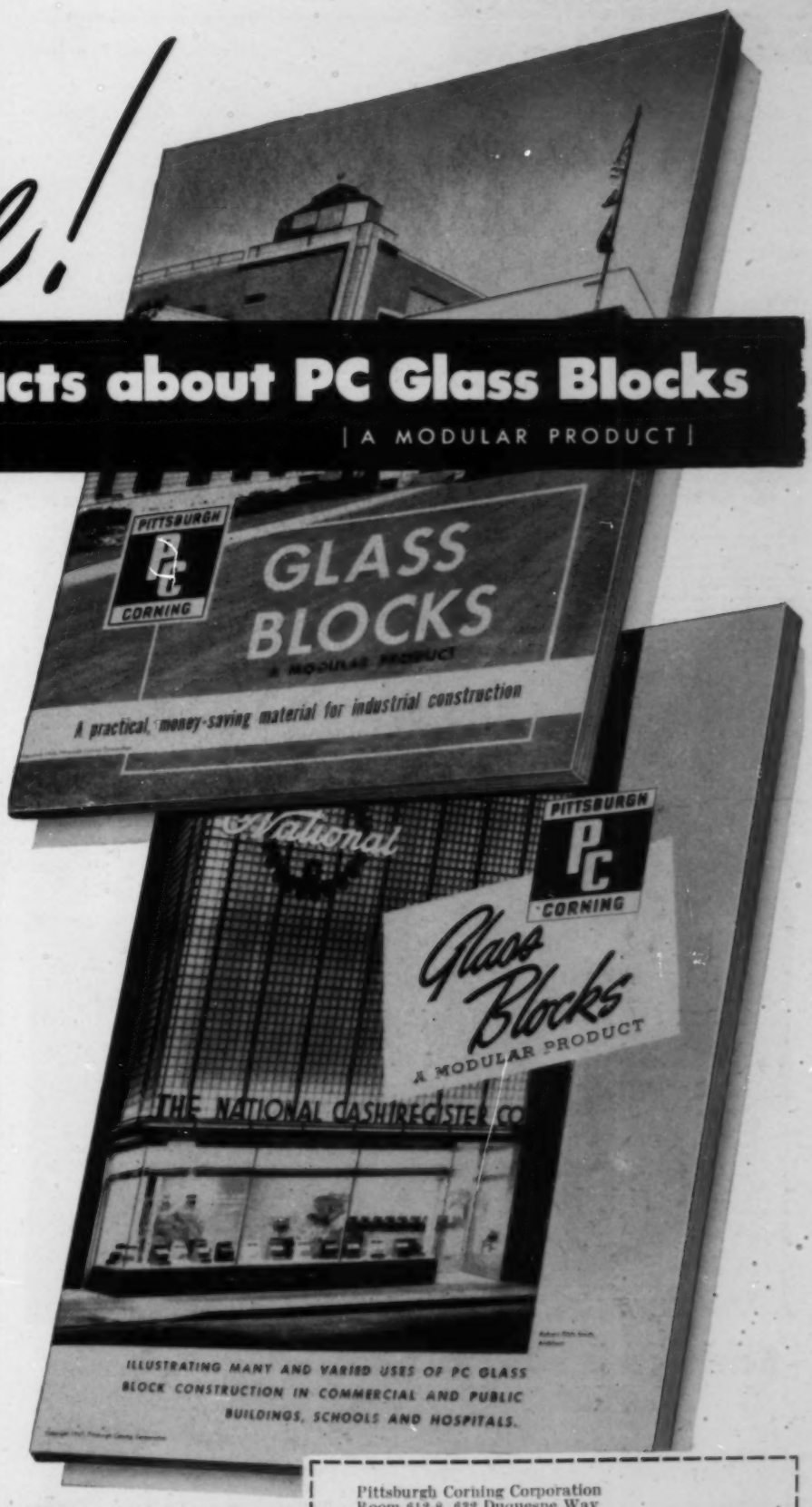

THE INDUSTRIAL BOOK treats comprehensively of the use of PC Glass Blocks in a wide variety of industrial plants to distribute light, to insulate, to exclude harmful dust and grit, to reduce maintenance and fuel costs.

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Address.....

City..... State.....

(*Continued from page 164*)

same shingle can be applied 4 in. to the weather to increase weight by 25 percent and make a triple coverage roof. When the 5-in. exposure is used, "practically certain" protection against wind can be obtained by cementing down shingles with asphalt cement. Two- and three-tab hexagon strip shingles can be windproofed in the same way.

Other recommendations cover nailing methods, design of the substructure, roof venting, and type of roofing for various pitch of roof decks. Asphalt Roofing Industry Bureau, 2 W. 45th St., New York, N. Y.

LIGHTING

Industrial Fixtures

For industries where high humidity conditions prevail, a fluorescent fixture has been given a special finish for protection against rust and oxidation of the metal parts. Other improvements include hook slots for easier mounting and latches for removing the reflector for cleaning and inspection. The unit, known as the *HF-100*, is a 2-lamp 40-watt fixture, equipped with a pair of knockouts to provide for another lamp if desired. Sylvania Electric Products, Inc., 500 Fifth Ave., New York, N. Y.

Accent Lighting

The *Prismatic Hy-Liter* provides spot-lighting for special effects, using an 8-in. Corning lens and a 150-watt lamp. They are made in recessed or surface types, the latter trimmed with reeded aluminum side ornaments. Reflectors are aluminum. Edwin F. Guth Co., St. Louis, Mo.

HOT WATER SYSTEM

The functions of two separate heating units are combined in the single *Janitrol Triple Service Heating Unit*, oil- or gas-fired, for supplying (1) water at controlled temperatures for house heating, (2) hot water for automatic home laundries, dishwashers, etc., and (3) tempered water for lavatory, tub, and shower. Since the water is mechanically circulated, either convector or radiant panel heating can be used; and mechanical circulation permits the unit to be located where most convenient: basement, utility room, closet, or attic. The system is offered as a "package," with the heat-generating unit assembled and ready to operate. A complete set of convectors (free-standing or recessed type) is furnished, and all necessary tubing, fittings, straps, etc., even the solder and flux for installation. Models are available in three sizes: 100,000, 150,000, and 210,000 Btu per hr. input, A.G.A. ratings. Janitrol Div., Surface Combustion Corp., Toledo 1, Ohio.

GARBAGE DISPOSAL

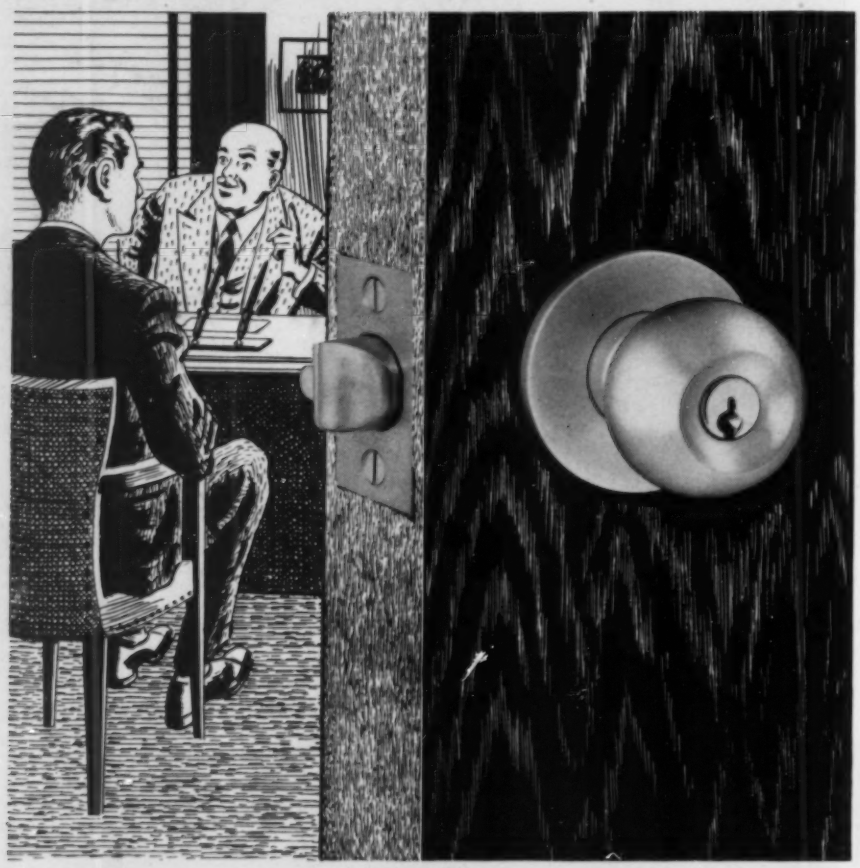
Although original building plans may not call for an *FA-3 Disposall*, the automatic garbage disposal unit for installation beneath the kitchen sink, provision can be made during construction for possible future installation. The accompanying roughing-in sketch from General Electric Company shows a suggested plumbing arrangement with a reserve drain outlet provided below for possible future use. Appliance and Merchandise Department, General Electric Co., Bridgeport 2, Conn.

ASTRONOMY CLASSROOMS

"Dramatizing the panorama of the heavens on the ceilings of classrooms," a small planetarium projector is now available for depicting images of the stars for classroom study. Designed by Armand Spitz, director of Museum Education at Philadelphia's Franklin Institute, the 3-ft. high portable unit can be used with flat walls or ceilings but

(*Continued on page 168*)

A Schlage Installation because...



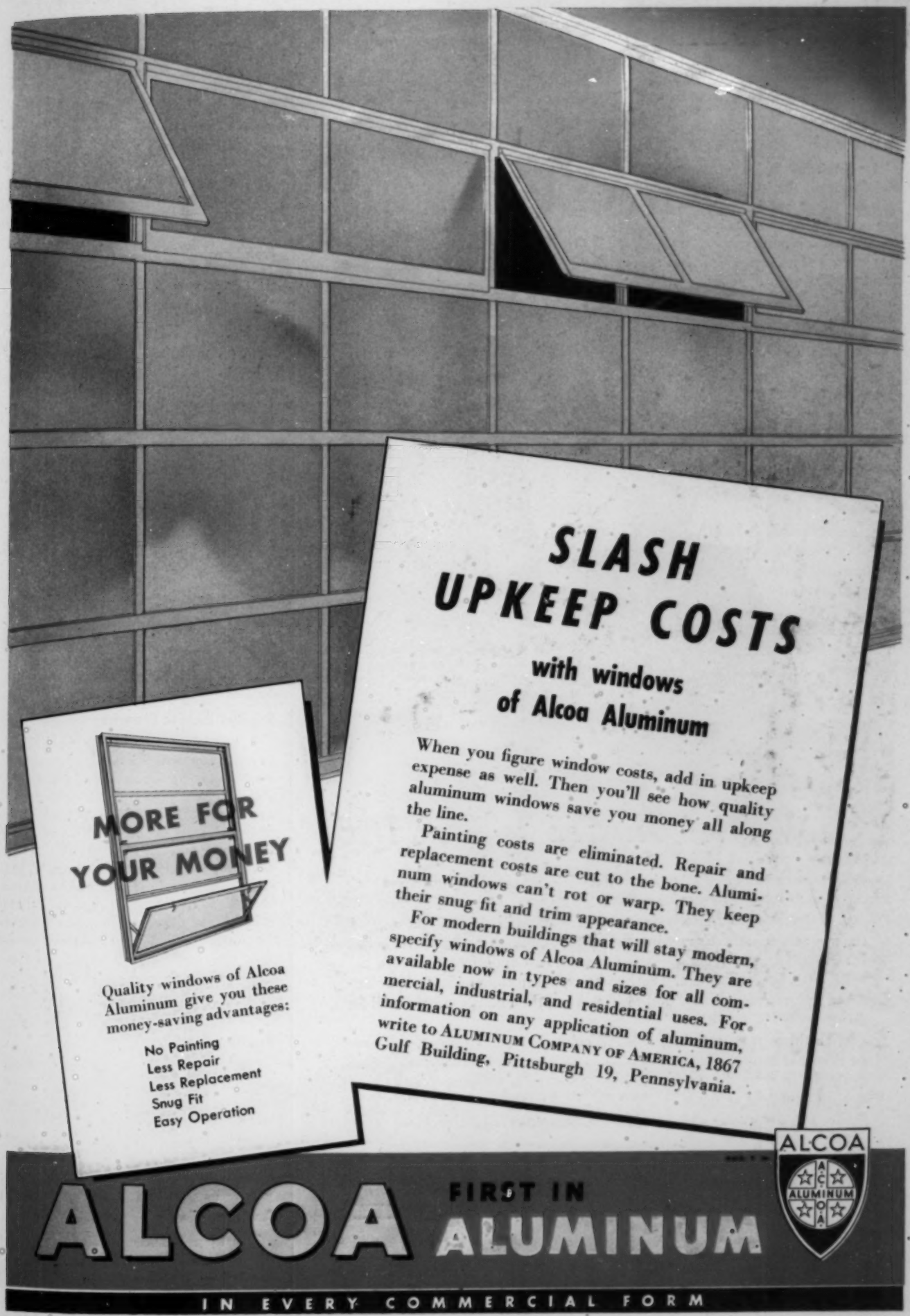
Schlage is reversible

Mr. Clark didn't foresee changes in the use of his offices, but the architect did. He specified Schlage locks because they can be easily reversed or interchanged to meet changing door usage. This flexibility of Schlage locks is only one of their many economy features.

See Schlage in Sweets Architectural File

SCHLAGE LOCK COMPANY
SAN FRANCISCO · NEW YORK

ORIGINATORS OF THE CYLINDRICAL LOCK



SLASH UPKEEP COSTS

with windows of Alcoa Aluminum

When you figure window costs, add in upkeep expense as well. Then you'll see how quality aluminum windows save you money all along the line.

Painting costs are eliminated. Repair and replacement costs are cut to the bone. Aluminum windows can't rot or warp. They keep their snug fit and trim appearance.

For modern buildings that will stay modern, specify windows of Alcoa Aluminum. They are available now in types and sizes for all commercial, industrial, and residential uses. For information on any application of aluminum, write to ALUMINUM COMPANY OF AMERICA, 1867 Gulf Building, Pittsburgh 19, Pennsylvania.

MORE FOR YOUR MONEY

Quality windows of Alcoa Aluminum give you these money-saving advantages:

No Painting
Less Repair
Less Replacement
Snug Fit
Easy Operation

ALCOA FIRST IN ALUMINUM

ALCOA ALUMINUM

IN EVERY COMMERCIAL FORM

(*Continued from page 166*)

works best with a portable dome or specially designed domed ceiling. The Bulkley Co., 61 Cliff St., New York 7.

MODULAR MEASUREMENTS

To assist in the layout of modular building projects, *Modultapes* are tape measures with special eyelets for marking modular spacings on a story pole or layout strip. Modultape No. 1 has eyelets spaced 4 in. centers for horizontal layout and vertical coursing of most brick, tile, and block; Module No. 2 has eyelets spaced 2⅔ in. centers for vertical coursing of 2⅔-in. brick, giving the modular standard three courses to 8 in. or six courses to 16 in.: and Modultape No. 3 has eyelets spaced 3.2 in. centers for vertical coursing of 3.2-in. brick, and laying up five courses to 16 in. The tapes are colored differently for quick identification, and come in 4-, 8-, or 12-ft. lengths. Fred Heath, McLean, Va.

SPECIFY Satisfaction

WITH Amtico RUBBER TILE

WHEN you specify Amtico Rubber Tile, you are putting your client's best interests first. It will give many years of hard service and its gleaming surface is easy to maintain. Its beautiful colors go all the way through; there's no danger of marring from wear or cigarette burns. It's so satisfying to walk on — quiet and resilient underfoot.

Lustrous beauty is there, whether for an auditorium or just a powder-room, and its ability to wear and wear makes it the number one material for floors.

With thirteen beautiful, marbleized colors at your command, you have an almost unlimited palet to use in creating distinctive and unusual designs. Write for literature and samples. You'll please your clients, and add to your reputation for knowing the best the market offers.

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Send samples and illustrated folder showing Amtico Rubber Tile in colors.

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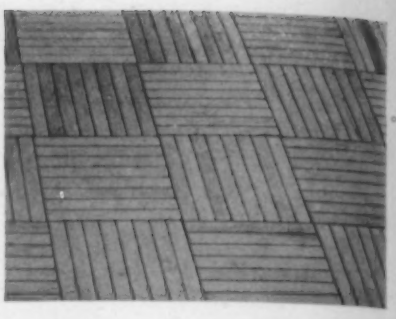


Prefabricated hardwood flooring squares

FLOORS

Wood Flooring

Castle Square Flooring comes in 9-in. squares, made of kiln-dried hardwood boards, 1 in. wide and 3⅜ in. thick, insulated on all four edges by a latex-filled strip of nonskid fibrous material. The fiber strips between individual boards are to serve as expansion joints; while a backing of the same material lends a certain amount of resilience to the flooring. The squares are applied, at right angles to one another, to the subfloor, cement slab, or old flooring by means of a mastic glue. At the edges of the rooms, the squares are cut to fit room size and allow for pipes, etc. At present the flooring is made from selected and unmatched Tennessee oak; future plans call for the addition of birch, beech, maple, and walnut hardwoods. Newcastle Industries, Inc., 300 W. 56th St., New York 19, N. Y.

Rubber Plastic Flooring

A new type of Goodyear rubber floor covering, described as a calendered vinyl product, is announced as resistant to stains, scars, and fire. The material, in a wide range of colors and marbleized patterns, can be installed in strip or tile form, and also lends itself to the covering of kitchen drainboards and sinks. Thermoplastic properties permit the material to be turned around sharp corners and other indentations without cracking. To simplify installation, Goodyear has developed an electrically controlled heater which will heat the entire lap area for perfect seams. The Goodyear Tire & Rubber Co., Akron, Ohio.

Resilient Tile

Sharper, brighter tones and two additional colors, red and blue, have been added to the *Linotile* line of linoleum-like resilient tile. The color range now includes ten colors, and allocation restrictions have been lifted due to increased production. Armstrong Cork Co., Lancaster, Pa.

Asphalt Tile

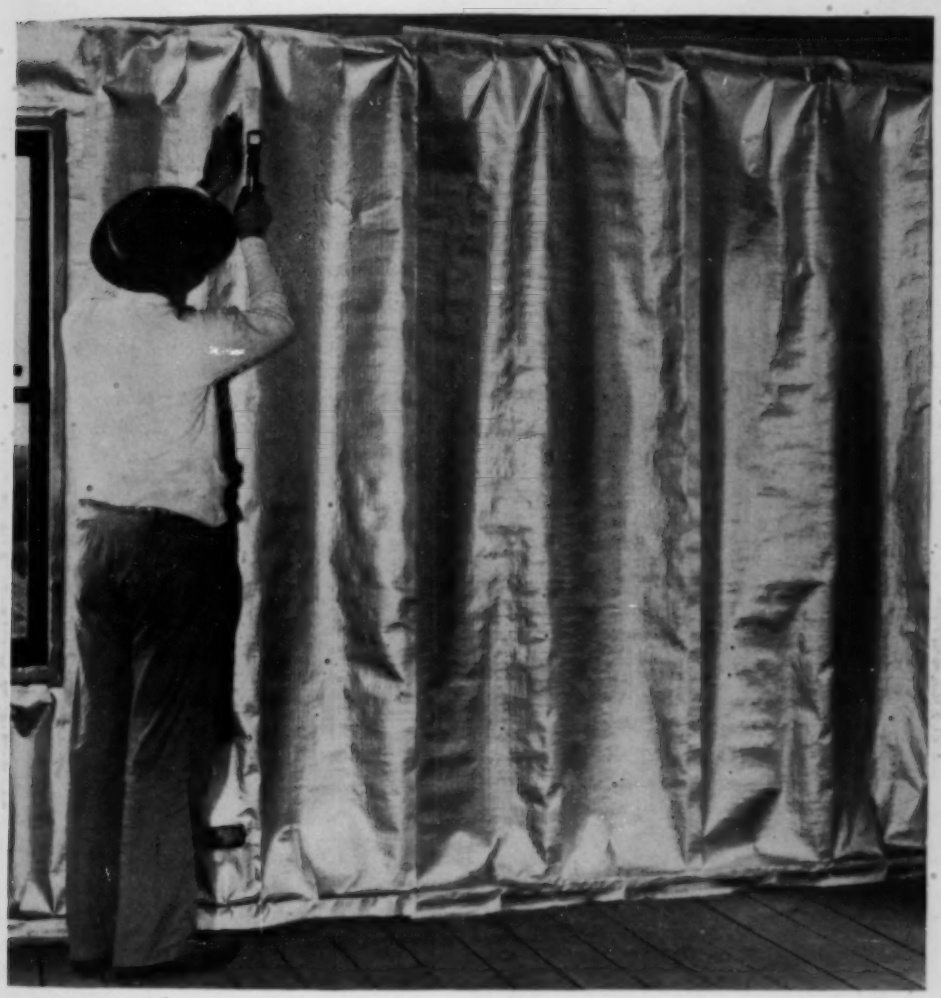
The manufacturer of *Kentile asphalt tile* announces the lifting of light-color restrictions and the offering of a wide

(*Continued on page 170*)

SAVE 50% OR MORE BY INSULATING WITH SISALATION

at about $25* per 1000 square feet

**Contractors' Price*



1 You get insulation that is completely effective, since SISALATION, properly applied, is equivalent in heat-saving values to approximately ¾" of flexible or rigid types of good insulations most commonly used... based on M.I.T. tests on sidewalls constructed with a single layer of reflective SISALATION.

2 SISALATION acts as an air-tight moisture-vapor barrier, thus protecting against dry-rot, paint failure, condensation. Exceeds FHA requirements as a vapor-barrier.

3 SISALATION, reinforced with steel-like sisal fibres, is so strong that one man can apply it over two stud-spaces at one time without danger of having the SISALATION rip or tear (see illustration). This makes for low application costs.

4 SISALATION does two jobs at one application cost . . . provides insulation *and* a vapor-barrier both at the same time.

5 SISALATION is AVAILABLE NOW for prompt delivery through your lumber or building supply dealer.

For complete information, use coupon below or write

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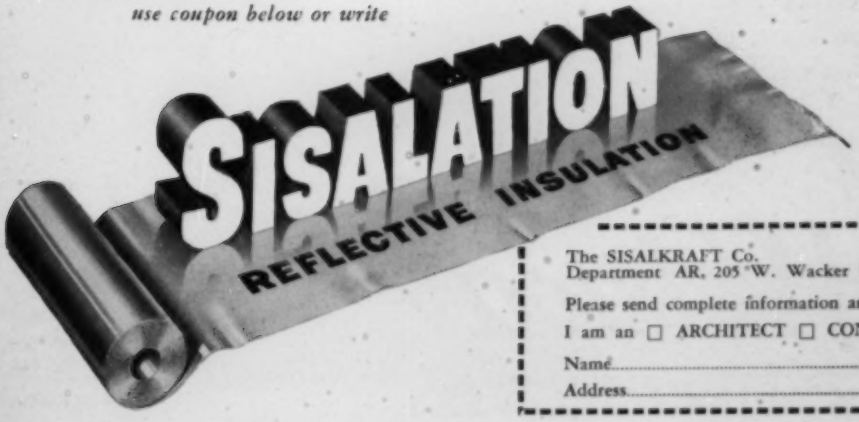
San Francisco 5, Calif.



The SISALKRAFT Co.
Department AR, 205 W. Wacker Drive, Chicago 6, Ill.

Please send complete information and tell me where I can buy SISALATION.

I am an ☐ ARCHITECT ☐ CONTRACTOR ☐ OTHER.....

Name.....

Address.....City, Zone & State.....

ARCHITECTURAL ENGINEERING

TECHNICAL NEWS AND RESEARCH

(*Continued from page 168*)

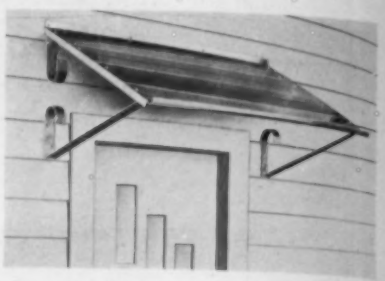
range of color effects in asphalt tile. Each of the colors, ranging from white through cream, light blue, beige, gray, green, and tan, is marbleized with two other colors. David E. Kennedy, Inc., 58 Second Ave., Brooklyn 15, N. Y.

SEATING

A specialized engineering service for architects has been announced to help them with public seating problems in the design of schools, theaters, and churches. The service covers floor layouts, inclines, sight lines, location of ventilators, etc. American Seating Co., 1776 Broadway, New York 19, N. Y.

AIR CONDITIONER

A new *Frigidaire air conditioner* occupies only 7½ sq. ft. of floor space, yet has a 5-ton capacity, said to be sufficient to cool several office rooms, or a small store or restaurant. Conditioners may be used in multiple, or operated with a simple duct system. Operation is controlled thermostatically, actuated by temperature of room air entering the conditioner. A heating coil may be added for winter use. Frigidaire Div., General Motors, Dayton 1, Ohio.



All-aluminum canopy for doors or windows

DOOR CANOPY

Hollywood canopies are of all-aluminum construction for installation over doors or windows of houses for protection against rain, snow, or sun. Brackets and panels are heavy-gauge, and will support a snow load of 235 lb. Finish is satin aluminum, which need not be painted unless desired. Dimensions are 42 in. wide by 32 in. deep. Colgate Mfg. Co., Amityville, Long Island, N. Y.

TELEVISION

For built-in installation in lounges and clubrooms, the *RCA Victor Clubman television unit* has a 15 by 20 in. viewing screen. Pictures are locked in focus by a synchronizer that reportedly eliminates electrical interference from elevators, etc. Both screen and FM speaker can be mounted flush with the wall. The chassis is designed so that the entire wall unit can be rolled out for maintenance. RCA Victor Div., Radio Corp. of America, Camden, N. J.

HOME BAR

The *Home Club Bar* is furnished complete with built-in refrigeration, plugging into any standard outlet, and provides "extras" in the way of a large frozen food compartment and a normal storage compartment for foods and beverages that require chilling only. A third section serves for the unrefrigerated storage of bar appurtenances. Front and sides are upholstered in Masland Duran, resembling leather; the top is colored Formica. Haldorf Mfg. Co., 1435–37 N. 31st St., Philadelphia, Pa.

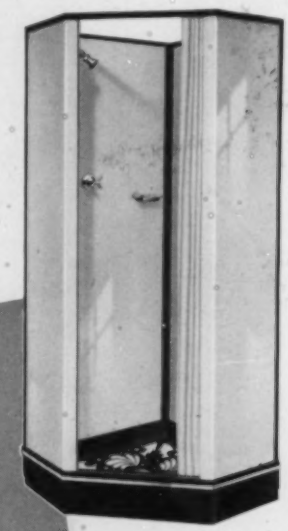
ADDOMETER

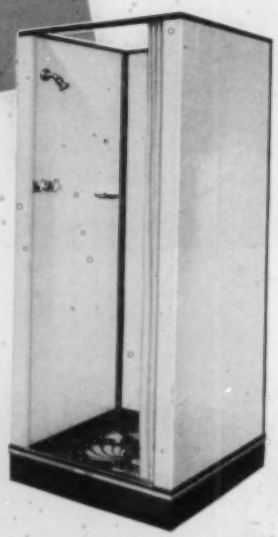
Architects, engineers, and construction foremen are offered a portable adding machine, known as the *Addometer*, for adding and subtracting feet and inches up to 999,999 ft. 11⅞ in. A stylus carried with the machine is used for turning dials, to the right for adding and to the left for subtracting. Weight is

(*Continued on page 172*)

For Quality In Every Detail

SPECIFY THE STANDARD





Your reputation is safe and your clients' best interests are served when you specify the Weisway Standard Cabinet Shower, now available in square or corner entrance models. Quality built, of service-tested materials, by the pioneer manufacturer in the field, Weisways are guaranteed leakproof, have Foot-grip, No-slip floor of vitreous porcelain enamel—safe, and easy to keep clean. For details write

HENRY WEIS MANUFACTURING CO., INC.
283 WEISWAY BUILDING, ELKHART, INDIANA

Weisway
CABINET SHOWERS

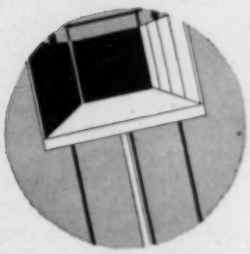
Solution to an Elevator Problem!

THE PROBLEM

To provide economical elevator service for a three-story manufacturing plant of functional design. All movement of raw and finished materials in plant to be handled by fork lift trucks which are to be carried on elevator in process of loading and unloading. Architect's visualization calls for building without elevator penthouse to break streamlined contour.

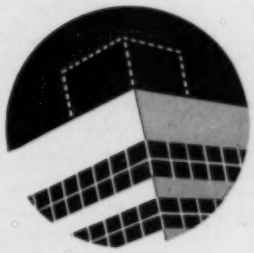
THE SOLUTION

The architect analyzed his problem as follows: (1) Since no elevator penthouse was desired, a push-up type elevator should be used. (2) Loading by power vehicles called for unusually accurate landing stops and for an elevator of very strong construction. (3) Initial cost of elevator, including construction provisions, must be held to a minimum . . . elevator operation and maintenance expense must be low. ***Result: A Rotary Oildraulic Elevator was selected because it met all these requirements.***



Elimination of Penthouse Streamlines Building Design

The Oildraulic Elevator requires no costly, unsightly penthouse because it's **pushed up** from below by a powerful hydraulic jack . . . not pulled from above. This also makes possible a lighter shaftway structure . . . no need for heavy load-bearing supporting columns to carry the elevator and its load. No special machine room necessary either . . . the compact power unit can be located in any convenient space on any floor.



Oildraulic Controller Insures Accurate Landing Stops

Where loading and unloading is done by power vehicles, the Rotary Oildraulic Elevator is first choice. Guided by a highly efficient mechanism called the Oildraulic Controller, it operates smoothly and rapidly, stops at floor landings with accuracy, and holds the landings. Also important for this type of service is the rugged construction of the elevator car, with its heavily reinforced sling and platform.

Streamline your building designs and make sizeable savings in construction costs by specifying Rotary Oildraulic Elevators for 2, 3 or 4-story structures. Coupon at the right will bring you complete information and Architect's Preliminary Layout Data.

For data to help solve your elevator problems

ROTARY LIFT CO.
1102 Kentucky
Memphis 2, Tenn.

Send data on Rotary Oildraulic Elevators to:

Name .....

Address .....

City and State .....

Rotary

OILDRAULIC ELEVATORS

The Elevator that's PUSHED up

(*Continued from page 170*)

14 oz., and construction is of steel to withstand rough treatment on the job. Reliable Typewriter and Adding Machine Co., Chicago, Ill.

DRAWING PENCILS

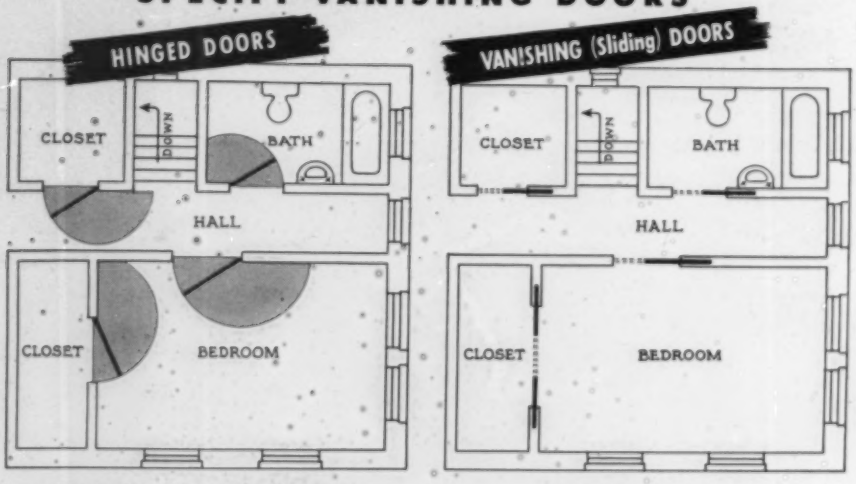
Manufacture of *Castell drawing pencils* has been resumed, now that processed graphite is again obtainable from Bavaria. A micrometric milling process is being used as heretofore. A. W. Faber–Castell Pencil Co., Newark, N. J.

CONDENSATE RETURN

A new condensate return system is said to eliminate individual traps on steam operated equipment and to provide a constant flow of steam and rapid return to the boiler of high temperature condensate. This system is also adaptable to the handling of process liquids. It is claimed that all water fed to the boiler through the system is deaerated by liberation of free oxygen and non-condensable gases detrimental to metal under heat and pressure. Available for steam pressures up to 250 lb. and in a range of boilers from 10 hp up. Said to increase production of steam heated equipment up to 30 per cent with savings from 13 to 27 per cent in fuel. W. M. Acker Organization, 3167 Fulton Rd., Cleveland, Ohio.

Stop Waste of Floor Space!

SPECIFY VANISHING DOORS



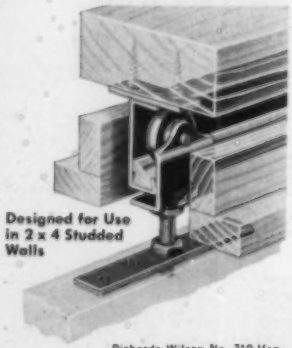
Shaded Areas are "Dead" Space — **No "Dead" Space Here**

Floor plans above show the same bedroom, closet and bath arrangement with hinged doors and with vanishing doors. Note absence of "dead" areas in plan utilizing vanishing doors.

Whether it's a spacious mansion or the tiniest kitchenette apartment, wasted floor space is wasted money! And every hinged door wastes the floor space covered by its swinging arc. With vanishing doors there's no floor area lost . . . furniture, pictures and fixtures can be placed correctly and conveniently; rugs can be laid close to the wall line; color harmony is not disturbed by the "wrong side" of an open door. For all interior doors, it's smart *and economical* to install vanishing doors.

Specify R-W Vanishing Door Hangers and Wood Lined Track

For smooth, quiet vanishing doors, be sure to specify Richards-Wilcox Vanishing Door Hangers and Wood Lined Track. Compact and noiseless in operation, R-W Vanishing Door Hangers are equipped with Oilite self-lubricating bearings. Hanger wheel rolls in "V" shaped groove in wood lining of steel track to keep wheel centered at all times—no metal-to-metal contact to cause noise or friction. Get complete details from your nearest Richards-Wilcox office—free consultation available without obligation.



Richards-Wilcox No. 719 Vanishing House Door Hanger and Wood Lined Track installation in ordinary 2 x 4 studded house partition, showing application of hanger and track to header and door.

Richards-Wilcox Mfg. Co.
"A HANGER FOR ANY DOOR THAT SLIDES"
AURORA, ILLINOIS, U.S.A.

1880 R-W 1948
OVER 68 YEARS

RADIATORS

A portable automatic electric radiator equipped with Mercoid automatic thermostat and pressure controls, called the *Roller-Radiator*, has been announced. It plugs into any 110 v. ac outlet and is said to provide regulated heat for a space of average height up to 15 by 20 feet. A 4-column, 10-section Arco cast iron radiator produces 4750 Btu. per hour. Mounted on swivel casters, the Roller-Radiator can be moved easily. It weighs 90 lb. and has 18.7 sq. ft. of radiation. Approved by Underwriters' Laboratories. Terminal Hardware Co., 411 Linden Ave., Wilmette, Ill.

HOSE VALVES

A radically new design in hose valves, for use in industry, which cuts water consumption in some cases up to 50 per cent, has been announced. Palm-size, it works on an old hydraulic principle—the operating parts being a plunger and controlling ball. At 50 psi hose pressure, less than 10 lb. finger pressure on the button opens the valve. Available for standard hose sizes from ¼ in. to 1 in., delivering up to 75 lb. per sq. in. line pressure. Made of Monel for maximum resistance to corrosion and wear. Rubber-coated body prevents scratching of interior surfaces of equipment being cleaned. Can be used with long extension nozzles. Adapted for use in paper mills, breweries, dairies, packing plants, etc. Paul Valve Corp., 683 Third Ave., New York City.

INTER-COM SYSTEMS

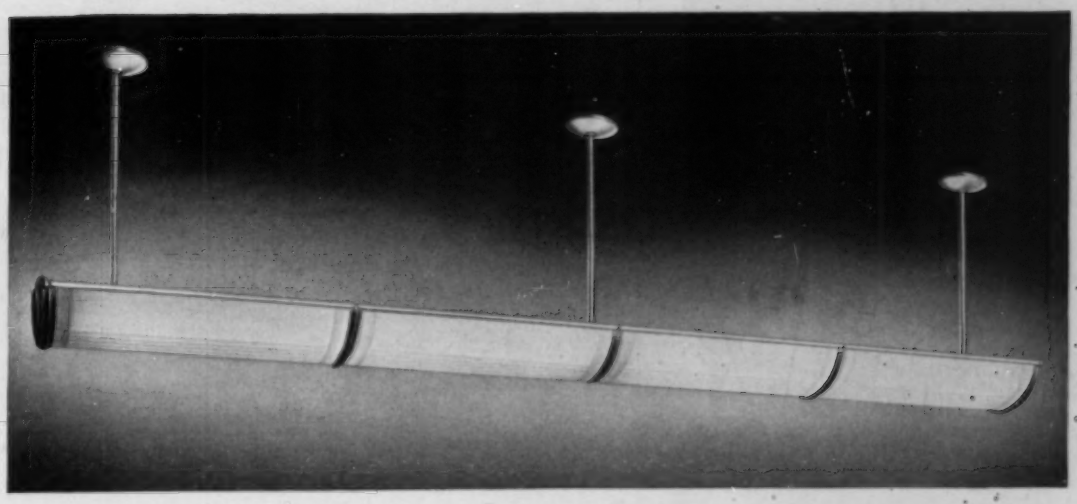
A new two-way inter-communication system sold as a "package" consists of a master unit, one sub-station and 50 ft. of cable and is suitable for installation in homes, professional offices, stores, farms, etc. Can be used as either "private" or "non-private"; two-way conversation can be originated from the master or sub-station. Master station only connected to 110–115 v, ac-dc; extra cable up to 2000 ft. available, Underwriters' approved. Talk-a-Phone Co., 1512 S. Pulaski Rd., Chicago 23.

LAMPS

A new 200 watt radiant flood lamp for service stations, homes, industrial plants, stores, ships, piers, etc., is now available. Made of heat resisting glass, it has a sealed-in-silver reflector which gives maximum light output. The glass resists moisture, sleet, insects and vibra-

(*Continued on page 174*)

This is the Wakefield STAR



. . . with the PLASKON Reflector that Insures UNIFORM LIGHT DISTRIBUTION

Modern artificial lighting strives for two objectives: first, an even distribution of light intensity, and second, the elimination of brightness contrasts. The Star utilizes a molded translucent Plaskon reflector of such density that the lighted luminaire is of approximately the same brightness as the illuminated ceiling. When Star units are used in continuous runs, spaced in accordance with Wakefield engineering specifications, uniform distribution of light is secured, with no deep shadows or sharp contrasts and without distracting glare from the light source.

MINIMUM REQUIREMENTS

The following table sets up the minimum requirements:

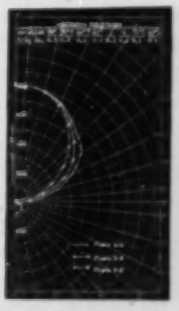
CONTINUOUS ROW INSTALLATIONS

	Room Index A	Large Rm. 48′ x 96′	Room Index D	Med. Room 24′ x 38′	Room Index G	Small Rm. 12′ x 24′
Spacing	No. Rows	Fcs.	No. Rows	Fcs.	No. Rows	Fcs.
4′ 0″	12 of 22*	79	6 of 10*	58	3 of 5*	43
4′ 4″	11 of 22	72				
4′ 9″	10 of 22	66	5 of 10	48		
5′ 3″	9 of 22	59				
6′ 0″	8 of 22	52	4 of 10	38	2 of 5	29
6′ 9″	7 of 22	46				
8′ 0″	6 of 22	39	3 of 10	23		

* Units per row.

Easily Installed and Maintained—Each 4′ Star section utilizes two 40W fluorescent lamps which are accessible from the top of the reflector. The Plaskon reflectors and end caps are light in weight, non-electrostatic, non-shatterable, non-combustible and are readily slid in and out for maintenance purposes without disassembly of the line. All visible metal parts are finished in satin aluminum.

The Star may be used singly in corridors or small rooms, or mounted in continuous rows. Continuous runs may be obtained from jobbers' stocks of bodies, reflectors, stems and end caps. Single units have twin suspension. Detailed installation instructions accompany each assembly.



Photometric Chart

Impartial tests by electrical testing laboratories to determine the candlepower efficiency of THE STAR in various planes have been plotted as a curve which demonstrates what may be expected from this unit. Data showing the estimated footcandles in service on various spacing arrangements are available. For further details, consult Sweet's File or write to

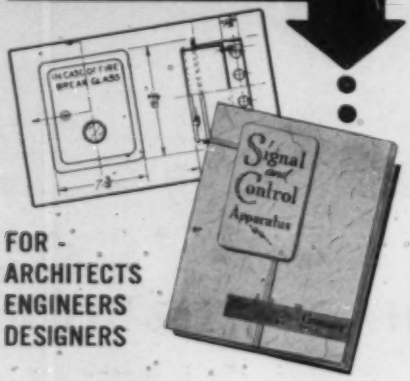
THE F. W. WAKEFIELD BRASS COMPANY
Vermilion, Ohio.

Wakefield Over-ALL Lighting

FOR OFFICE • DRAFTING ROOM • STORE AND SCHOOL

THE GRENADIER II — THE GRENADIER IV — THE COMMODORE — THE DIPLOMAT

Here it is
COMPLETE INFORMATION on FIRE ALARM SYSTEMS



FOR -
ARCHITECTS
ENGINEERS
DESIGNERS

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Invaluable for quick reference, this catalog contains illustrations, sketches, and wiring diagrams for all types of Fire Alarm Systems, for any building.

Suggested electrical specifications for your information and convenience are also supplied.

Specific Information on complete Fire Alarm Systems, Boxes, Signals, Punch Registers, Printing Recorders, etc., at your finger-tips.

Ask for your copy today! There is no obligation.

the Autocall Co.
221 TUCKER AVE., SHELBY, OHIO
ALSO MFRS. PAGING AND SPRINKLER ALARM SYSTEMS

(*Continued from page 172*)

tion without cracking. Radiant Lamp Corp., Newark 8, N. J.

WATER HEATERS

An automatic water heater engineered to use butane, propane or any mixture of liquefied petroleum gases has been announced. Offered in three sizes, 20-, 30- and 45-gal. capacity, this heater features an all-steel atmospheric burner. Air makes free contact with the flames to assure complete combustion. The new Grayson "Unitrol" consolidates the thermostat, safety shut-off valve, main gas cock, gas flow control valve and pilot valve in one unit. Manufacturer claims fuel costs for this heater are considerably less than electricity in most areas. Coleman Co., Inc. Wichita 1, Kan.

ELECTRIC HEATERS

Westinghouse Electric announces a new floor model electric heater with a built-in thermostat which heats by both radiation and convection. Available in 2, 3 or 4000 watt capacities, all units are 19 in. high and operate on 230 volts ac. Westinghouse Electric Corp., Pittsburgh, Pa.

STORM SASH

A metal storm window installed on the inside and combining the casement and screen to make a complete window unit is offered by the manufacturers of Fenestra steel casement windows. An extruded rubber gasket is attached to the storm window frame to prevent metal-to-metal contact and to act as a quick seal for the whole opening. It is interchangeable at same-size windows, is made of formed steel, bonderized, with baked-on coat of paint. Installation of this storm window is said to provide an insulating air space between the windows, reducing heat loss and preventing fogged or frosted windows. Detroit Steel Products Co., 3113 Griffin St., Detroit 11, Mich.

SWITCHES

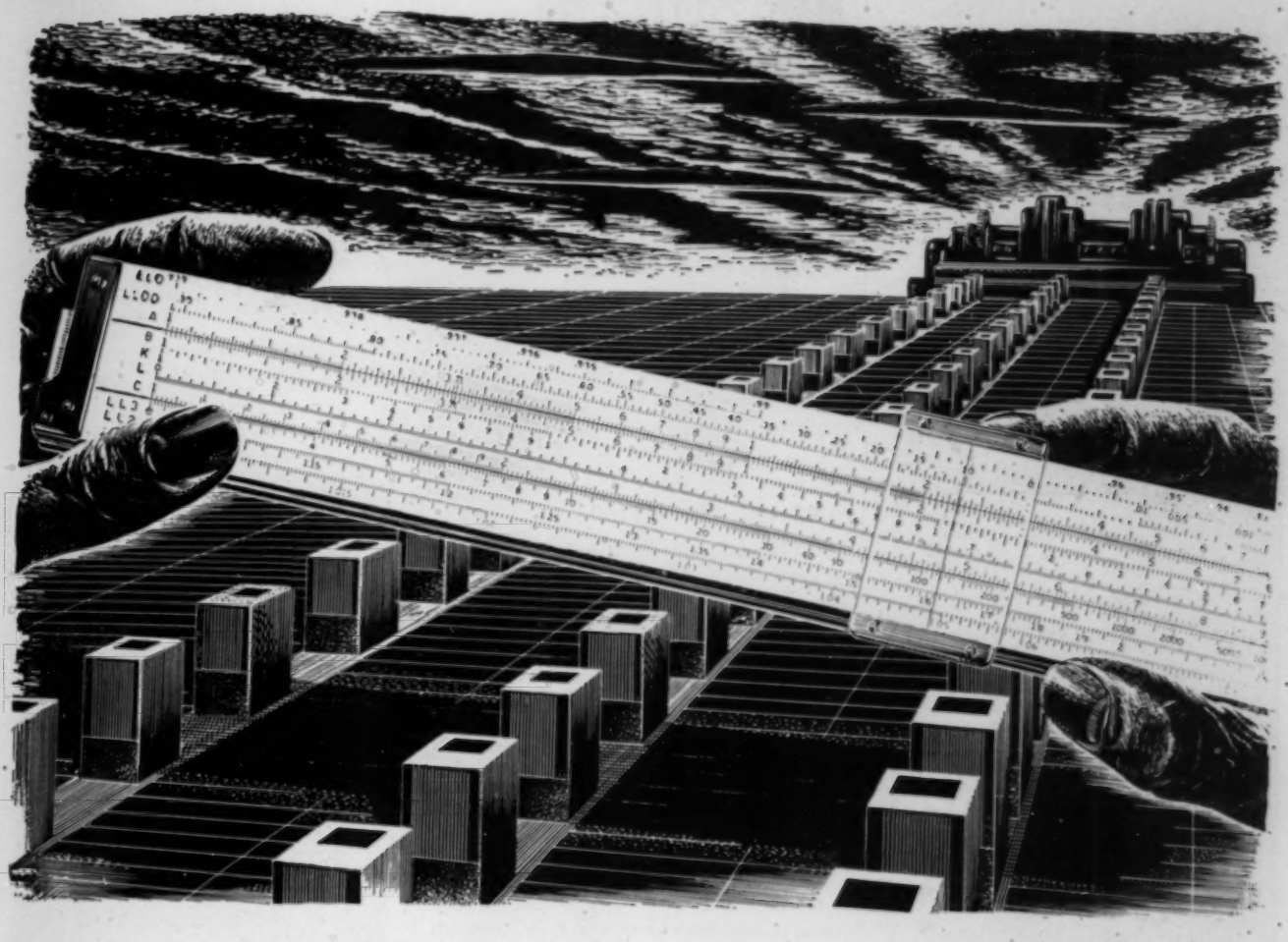
A new mercury switch for homes and commercial buildings, with a 10 amp. T-rating at 125 volts has been developed by General Electric Co. Mercury is contained in a metal enclosure, which consists of mercury-to-mercury contacts enclosed in two metal alloy disks glass-sealed in a ceramic barrier. Hydrogen gas in the "button" prevents oxidation of the mercury and cools and quenches the arc when circuit is broken. General Electric Co., Bridgeport, Conn.

CORRECTION

Trade name for the house intercommunication system of Webster Electric Co., Racine, Wisc. (ARCHITECTURAL RECORD, Dec., 1947, p. 152) is *Telehome*.

LOOK-One Hand!
A. W. Faber's quick-action (black or colored)
LOCKTITE
drawing pencil
refill works with a flip of the thumb

1). Patented collet to hold lead in bull-dog grip.
2). One-hand clutch operation to avoid touching lead and smearing fingers.
These are but two exclusive features which make LOCKTITE the favorite of professional men. Collet prevents lead breaking or slipping. Try this clean, balanced, sturdy mechanical beauty and you will surely want to own it.
Holds all standard graded drawing or retouching leads. Winner Techno-TONE No. 1930 assures best results.
ALSO AVAILABLE IN RED, BLUE, GREEN, YELLOW, CARMINE, ORANGE and WHITE —holding hardy WINNER Techno-TONE crayon leads for coloring, sketching and checking.
BLACK in degrees 4B to 9H.
Sold at Stationers', art and drawing supply stores, photo supply shops and Blueprinters.
GUARANTEED OF COURSE!
A.W. FABER-CASTELL PENCIL COMPANY INC. NEWARK 4, N.J.



TRANE HEATING and AIR CONDITIONING -- Engineered Products for Engineered Systems

Complete air conditioning systems provide heating as well as cooling. More than that, they provide humidification, dehumidification, filtering, and air circulation. Obviously, no two applications require exactly the same combination of all of these functions . . . thus mass-produced air conditioning often provides too much of one factor and too little of another.

Architects, engineers, and contractors — who know that each job calls for a specially designed system — find their solution in the complete Trane line of heating and air conditioning products. They combine Trane engineered products — built with the economy of line production — into systems that meet exact requirements in every way.

Because Trane manufactures a *complete* line, architects, engineers, and contractors can plan entire Trane systems, obtaining all the necessary elements from one source, with one responsibility. Trane Field Offices in 85 principal cities offer these men their entire cooperation.

* * *

The Convector-radiator—modern successor to the old-fashioned cast iron radiator—has been engineered by Trane for universal application to steam and hot water heating systems, and is being produced in quantity so you can now secure it from local distributors' stocks.

TRANE

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EMPHASIZE
THE BEAUTY OF
Natural Wood

Cabot's Creosote Stains provide a variety of interesting and practical colors for wooden siding, clapboards, and shingles . . . clear brilliant hues to weathering grays and browns. Cabot's Stains actually dye the wood, bringing out all the natural beauty of the grain. And Cabot's Stains are made with 60% to 90% pure creosote oil, the best wood preservative known.

Cabot's Stains are inexpensive . . . cost less than half as much as good paint. Go on quickly and easily. Won't peel or blister, even on green lumber.

Write Today for *free booklet,* "Stained Houses" and color cards. Samuel Cabot, Inc., 2181 Oliver Building, Boston 9, Mass.

Cabot's Creosote Stains

ARCHITECTURAL ENGINEERING

TECHNICAL NEWS AND RESEARCH

(*Continued from page 150*)

was used. 32 pp., illus. The Master Builders Co., Cleveland 3, Ohio.

PAINT COLORS

Devoe Color Comfort. Condensed specifications for Devoe paints, and a short guide to the selection of colors for room interiors on a scientific basis. Colors are grouped in four series of color types, keyed to the four natural exposures — north, south, east, and west. 44 pp., illus. Devoe & Raynolds Co., Inc., 787 First Ave., New York 17.*

STEAM TURBINE

Whiton Steam Turbines. Booklet on engineering features of a solid rotor type steam turbine, including engineering drawings and dimensional data for use in selecting the size and type of turbine needed for specific applications. 8 pp., illus. The Whiton Machine Co., New London, Conn.

METAL MANUFACTURERS

The Bluebook of Stamping Manufacturers. Booklet containing a listing of member companies of the Pressed Metal Institute, divided geographically and alphabetically, with a general description of their products. 8 pp. Pressed Metal Institute, 829 Union Commerce Bldg., Cleveland 14, Ohio.

LITERATURE REQUESTED

The following individuals and firms request manufacturers' literature:

Alfred Greif, Jr., Engineer, Department of Agriculture, Kansas State College, Manhattan, Kansas.

Hart, Igleburger, Wurst & Associates — Architecture, Land Planning, Engineering — Mutual Home Bldg., Dayton 2, Ohio.

C. H. MacMahon, Jr., A.I.A., 18330 Kelly Rd., Detroit 24, Mich.

Daniel Moskowitz, Student, 2243 62nd St., Brooklyn 4, N. Y.

R. L. O'Steen, Jr., Architectural Draftsman, 12 Coffee County Bank Bldg., Douglas, Ga.

Max Ratner, Architect, 45 N. Prospect, Oberlin, Ohio.

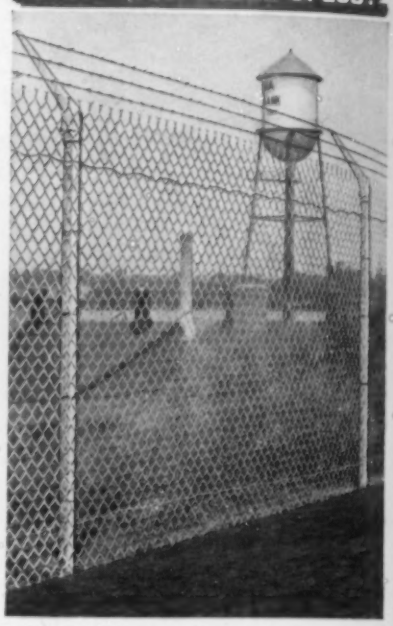
Gordon D. Rust, R.A., 107 W. Nelson Ave., Alexandria, Va.

Lawrence T. Smith, Principal Architectural Engineer, Division of Hospital Construction and Administration, State of Maryland Dept. of Health, 2411 N. Charles St., Baltimore 18, Md.

Perliter & Soring, Engineers, 108 West 6th St., Los Angeles 14, Calif.

Yingman Architectural Engineering Office, 45 Yenking Rd., Shanghai 18, China.

HOW TO WRITE
LONGER LIFE-- MORE PROTECTION
INTO YOUR FENCE SPECS!



SPECIFYING *Anchor Chain Link Fence* is the answer to that one . . . whether you're handling industrial, institutional or residential jobs! For years, leading architects have been relying on *exclusive* Anchor features like these to insure lasting fence protection for their clients:

1. *Deep-Driven Anchors*, which hold the fence erect and in line, in any soil or weather, yet permit easy relocation at any time; 2. *Square Frame Gates*, amazingly free from warping and sagging; 3. *U-Bar Line Posts*, self-draining, rust-free and rigid; 4. *Square Terminal Posts*, which improve strength, durability and appearance.

Your A.I.A. File 14-K isn't complete if you don't have detailed information on Anchor Chain Link Fence. So write for your free copy of our latest booklet today! It shows types and uses of Anchor Fence . . . prominent installations . . . structural diagrams and specifications. Write to: ANCHOR POST FENCE DIV., Anchor Post Products, Inc., 6600 Eastern Ave., Baltimore 24, Md.

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House & Garden creates new trends in living for an audience that thousands of others follow. Prestige stores display these trends... knowing that acceptance by the people who influence other people is the key to multiple sales. House & Garden's far-reaching influence... through key people... and key stores... becomes a powerful force at the point of sale. This is the golden touch.

House & Garden

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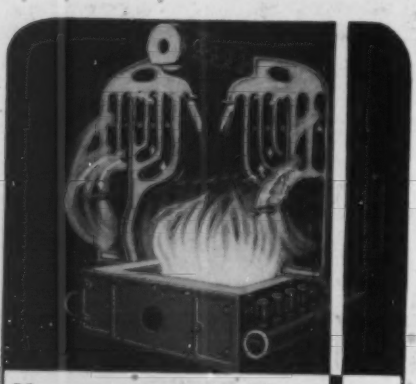
alert management uses House & Garden's golden touch *in the golden markets*



How many boilers do *you* see?

The nine-section Mills-44 boiler illustrated above is actually 18 boilers, guaranteeing you 18 times as much security as any other type boiler. If, for any reason, a section becomes disabled, 17 other boilers continue to function, without interruption!

Why so? Header type construction makes each section a separate boiler — *each* receives returns uniformly from return drums and *each* discharges to a steam drum. A cracked section can be temporarily blocked off by simply cutting its supply and return nipples and plugging the drums. The replacing section can then be installed when convenient.

There's a place for Smith-Mills boilers wherever *continual, uninterrupted, economical* heating is necessary. Other unique and exclusive advantages of Smith-Mills boilers are described thoroughly in the H. B. Smith Catalog . . . write for it.

H. B. Smith

CAST-IRON BOILERS

THE H. B. SMITH CO. INC.,
67 Main St., Westfield, Mass.

Offices and Representatives in Principal Cities

REQUIRED READING

(Continued from page 30)

sion of a generous number of site plans, floor plans and photographs of existing buildings in widely scattered parts of the country. Whimsical little sketches are used throughout to illustrate the points made.

One of the best chapters in the section on design is the last, which has to do with current trends. As Mr. Abel's firm (Berla & Abel, of Washington, D. C.) is one of the country's most active in the apartment field, he is in a position to know just what is wanted and what is being built.

Part 2 of the volume, "Structural Design," has been prepared by Fred N. Severud, whose work, like Mr. Abel's, is thoroughly familiar to RECORD readers. This section discusses framing and framing systems and wall construction, winding up with a chapter entitled "pitfalls." Diagrams and detail drawings are used liberally throughout.

In the last section of the volume are three special chapters: "Heating and Air Conditioning," by Clifford Strock, editor of *Heating and Ventilating;* "Elevators," by H. M. Nugent and W. H. Easton, Jr., of the Otis Elevator Co.; and "Landscaping," by Alfred Geiffert, landscape architect.

CITY PLANNING

A STUDY OF METHODS

The Case for Regional Planning, with special reference to New England, by the Directive Committee on Regional Planning, Yale University, Yale University Press, 1947. 94 Pages, 9 by 12 in. $10.00.

This book could convince almost anyone that state boundaries are arbitrary, artificial and anachronistic.

The purpose of the study, however, is more to outline methods of intelligent planning than to change maps, for, the authors maintain, "exact planning for the achievement of national objectives is fully accepted in principle and practice today by the partisans of all political faiths."

Planning, says the report, has long been a tradition in American business, and more recently in the federal government, but neither of these can achieve the expression of the individual as can planning through such smaller organic units as the neighborhood, the district and the region.

Using New England as an example, the study shows the conditions which make it possible for the people of a region to plan for better homes and character-building institutions (termed

(Continued on page 180)

Costly wall sweating this inexpensive way

● Bird Neponset Black Vapor Barrier applied on the warm side of insulation prevents "in-wall" moisture damage—it repels vapor, keeps insulation at peak efficiency and stops other condensation evils.

Bird Neponset Black Vapor Barrier costs only about $20.00 to protect a $10,000 house. Consult Sweet's Architectural File, 9b-2. For sample write Bird & Son, inc., 180 Washington Street, East Walpole, Mass.

Specifications — Roll width: 36"; square feet: 500; approximate weight: 50 lbs. Asphalt saturated. Coated both sides with glossy asphalt surface. Meets Federal Specifications UU-P-536 Grade B.

BIRD NEPONSET BLACK VAPOR BARRIER

BIRD & SON, inc., East Walpole, Mass.
Chicago · New York · Shreveport

A Beautiful Blonde joins a Famous Family

She's light . . . she's bright . . . she's beautiful. She has a warm, honey-colored complexion, and a *beautiful* figure . . . both stripe and some cross-fire.

Her name is *Korina* . . . and she's the newest beauty in the famous family of Weldwood Hardwood Plywoods.

But don't get us wrong. *Korina* is not expensive, and she's far from flamboyant. This new decorative beauty is right at home any place . . . in the best shops, the finest homes.

And *Korina* is now being shipped to lumber dealers all over the country in a good range of sizes and thicknesses.

When it comes to price, there's another pleasant surprise. *Korina* closely resembles Prima Vera. It finishes every bit as well . . . *yet costs one-third less!* In addition, *Korina* is cleaner, sounder and runs to wider flitches.

If you haven't yet seen *Korina,* make a date to meet this new beauty at your favorite lumber dealer. You'll find all the familiar features of Weldwood Plywood . . . so popular with clients and architects alike.

Mail the coupon for complete information.

MAKE A DATE TO MEET KORINA

It's easy. Just clip out and mail the coupon.

UNITED STATES PLYWOOD CORPORATION
55 West 44th St., New York 18, N. Y.

Gentlemen: Please send me complete specifications on your new Weldwood Hardwood Plywood . . . *Korina.*

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Weldwood Plywood and Mengel Flush Doors are products of

UNITED STATES PLYWOOD CORPORATION
New York 18, N. Y.

THE MENGEL COMPANY
Louisville 1, Ky.

Distributing units in Baltimore, Boston, Brooklyn, Chicago, Cincinnati, Cleveland, Detroit, Fresno, High Point, Los Angeles, Newark, New York, Oakland, Philadelphia, Pittsburgh, Rochester, San Francisco, Seattle. Also U.S.-Mengel Plywoods, Inc. distributing units in Atlanta, Dallas, Jacksonville, Louisville, New Orleans, Houston, St. Louis. *In Canada:* United States Plywood of Canada, Limited, Toronto. *Send inquiries to nearest point.*

Weldwood* Hardwood Plywood
Douglas Fir Weldwood
Mengel Flush Doors
Douglas Fir Doors
Overhead Garage Doors
Molded Plywood
Armorply* (metal-faced plywood)
Tekwood* (paper-faced plywood)
Flexmetl
Weldwood Glue* and other adhesives
Weldtex* (striated plywood)
Decorative Micarta*
Flexwood*
Flexglass*
Firzite*

*Reg. U. S. Pat. Off.

Weldwood
Plastics and Wood Welded for Good

Weldwood Plywood is made in both interior and exterior types, the former bonded with extended urea resins and other approved bonding agents; the latter with phenol formaldehyde synthetic resin.